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CLINICIANS' VIEWS OF COMPUTER-GUIDED CBT IN ADULT MENTAL HEALTH AND FACTORS RELATED TO REFERRALS

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Declaration

I composed this thesis, the work is my own. No part of this thesis has been submitted for any other degree or qualification.

Name……..... Date……

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ABSTRACT

Objectives: Computer-guided CBT could help to increase much needed access to low-intensity psychological interventions. Evidence for effectiveness has led to the inclusion of certain packages in NICE guidelines but application in clinical settings is unclear. Low uptake and high dropout suggest problems with acceptability and barriers to uptake. Studies neglect to report on acceptability to clinicians despite indications that clinician-related variables and attitudes could influence their use of CCBT. This study investigates clinicians' views of CCBT and factors related to referring to it, following experience of low referrals to a CCBT pilot, with the aim of learning more about barriers to access and how this might be improved.

Method: A mixed quantitative and qualitative design was used. An online survey was developed to gather views on CCBT, its implementation and demographic information. This was sent to a sample of clinicians in the clinical psychology department, mental health nurses and general practitioners, some of whom were involved in the CCBT pilot project and some not. Descriptive statistics, non-parametric correlations, chi-squared analyses and framework thematic analysis was carried out on 72 completed surveys.

Results: Most clinicians identified both benefits and concerns of CCBT. Most approved of CCBT but likelihood to refer varied and many preferred to offer other interventions. Clinician-related variables associated with likelihood to refer were whether clinicians saw mild to moderate cases, approval of CCBT and perceived patient uptake. Views regarding the effectiveness of CCBT influenced choices to offer it, with negative beliefs about effectiveness including a perceived need for human contact. There was moderate interest in receiving CCBT training. Most thought it should be accessed widely, with some concern raised about access in public settings. Although GPs were not involved in the CCBT pilot, many expressed interest in receiving training and referring.

Conclusions: Clinicians' views of CCBT are mixed and some believe it is ineffective and unacceptable to patients, which influences their decisions to offer it. This includes perceptions about key aspects of therapy, such as human contact. Therefore some clinicians need more convincing of the CCBT evidence-base before they are likely to refer to it. Nevertheless there is moderate interest in using CCBT and more so in those seeing mild to moderate cases. CCBT may have a position in stepped care services but views of referrers should be considered and training offered. More research is needed on implementing CCBT, barriers to access and its role alongside other interventions.

1 INTRODUCTION

1.1 Overview

Computer-guided cognitive-behavioural therapy (CCBT) could help to improve much needed access to psychological interventions for adults with anxiety and depression (Marks *et al*. 2007). Some programmes have gained sufficient evidence for inclusion in treatment guidelines for adults with mild to moderate depression and anxiety (NICE, 2006, 2009 & 2011). Policies aim to increase access to psychological interventions due to a high prevalence of anxiety and depression but few receive this (Scottish Executive, 2006). High referral rates and long waiting times are driving demand for effective low-intensity, self-directed interventions requiring less input from clinicians. CCBT is an example of this and is being increasingly offered in services; however reports indicate barriers to uptake exist (Titov, 2007; Waller & Gilbody, 2009).

There is limited evidence for how best to implement CCBT as packages and methods of delivery vary greatly (Marks *et al*., 2007). In addition, studies reporting low uptake indicate a need to examine acceptability and barriers in order to improve access and utilise resources more efficiently (Waller & Gilbody, 2009). Research on low uptake focuses on dropout and patient acceptance rather than the role of the referral process and potential clinician factors influencing referrals. It is also recognised that resistance can arise, due to both individual and organisational issues, when trying to introduce change into healthcare systems (Slade & Priebe, 2006; Williams & Martinez, 2008) and psychological theories propose that individual and social factors can influence staff behaviour (Hogg & Vaughan, 2011).

The research questions in the current study arose following the researcher's experience of working on a pilot project of computer-guided CBT (CCBT) for anxiety and depression (see Appendices 1 - 4 for details of CCBT pilot and context of research). Initially, the researcher planned to compare outcomes from two different CCBT packages (*Beating the Blues* and *Living Life to the Full*) but referrals were low. After 5

months there were 10 referrals to *BtB* and 22 to *LltF,* with only two completers. There was some rise in referrals after efforts to remind clinicians of the project but the majority of these were from just a few clinicians in the project team. Therefore the researcher decided to investigate reasons underlying low referrals from the perspective of potential referrers. The study investigates clinicians' views on implementing CCBT for anxiety and depression in a clinical setting and possible influences on referrals, with the aim of improving implementation and consequently, access to psychological intervention.

1.2. Improving Treatment for Anxiety & Depression

1.2.1. Clinical Features

Anxiety disorders include a range of diagnoses such as generalized anxiety, panic (with or without agoraphobia), social phobia and specific phobia (DSM-IV). These can occur in isolation, but are often comorbid with other anxiety disorders or depression (NICE, 2011). From a cognitive-behavioural perspective, anxiety is characterised by cognitive aspects (e.g. exaggerated worry; catastrophic negative thoughts); physiological symptoms such as increased heart rate, breathlessness and sweating; and behavioural avoidance of situations that trigger anxiety (Lindsey & Powell, 2007)

Depression is characterised primarily by low mood and loss of pleasure, including symptoms such as a lack of energy, poor concentration, disrupted sleep, reduced interest in daily activities and withdrawal from social interactions (DSM-IV). Cognitive aspects often include negative beliefs about the self, others or the future (Beck, 1976). Severity varies depending on the number of symptoms and functioning, and is often categorised as subthreshold, mild, moderate or severe (NICE, 2009).

1.2.2. Social and Economic Burden

Anxiety and depression are highly prevalent, accounting for approximately 30 per cent of visits to GPs in the UK (Scottish Executive, 2006). The UK Psychiatric Morbidity Survey reported that 16 per cent of those aged between 16 and 75 were suffering from

some form of anxiety or depression, with prevalence rates (out of 1000) of: 88 for mixed anxiety and depression, 44 for generalised anxiety disorder and 26 for depressive episode (Office of National Statistics, 2001). The World Health Organisation (2001) reported figures of 7 per cent with generalised anxiety and 17 per cent with current depression in the UK. Depression is predicted to become the main source of disability and economic burden in developed countries by 2020 (WHO, 2001).

The economic costs of anxiety and depression, both to the individual and to society, are widely recognized (Scottish Executive, 2006; Layard *et al*., 2006). In 2000, the total cost of depression was estimated at over £9 billion, with direct treatment costs at £370 million and 109.7 million lost work days (Thomas & Morris, 2003). It has also been estimated that the annual economic cost of mental illness for the UK is £25 billion, with £8 billion of this being direct mental health service costs (Layard *et al*., 2006). Indirect costs include lost output due to sick days and £10 billion paid out in benefits.

1.2.3. Treatment Recommendations

Historically, the first line of treatment for anxiety and depression was medication but psychological interventions are now included in best practice guidelines due to their growing evidence-base (NICE 2009, 2011). The guidelines state that individual psychological therapy (notably Cognitive Behavioural Therapy (CBT)), medication and self-help have all been shown to be effective, with evidence showing that individual psychological therapy has the greatest long-term effectiveness. A review of psychological therapies recommended CBT for anxiety disorders and both CBT and Interpersonal Therapy (IPT) for depression (DOH, 2001). Self-help approaches are recommended in NICE guidelines as a low-intensity intervention for mild to moderate difficulties and the range of recommended methods includes books, groups and computer-guided CBT.

1.2.3.1 Cognitive Behavioural Therapy (CBT)

Cognitive-behavioural therapy (CBT) proposes that negative affect is associated with negative automatic thoughts (cognitions), which are also linked to behaviours and physical bodily experiences (Lindsey & Powell, 2007). Distorted negative cognitions are considered to arise from underlying core beliefs developed from early childhood experiences (Beck, 1976). CBT works to identify and change problematic cognitions, behaviour and physical feelings that maintain negative affect (Lindsey & Powell, 2007). This therapy has been extensively and rigorously researched, with a recent review of 16 meta-analyses showing large effect sizes for a number of presenting problems including depression and anxiety (Butler *et al*., 2006). This approach is used not only in individual therapy but also low-intensity, self-help approaches, including CCBT.

1.2.4 Insufficient Access to Recommended Psychological Treatment

Policies are attempting to change the fact that, although CBT is a recommended psychological treatment approach in NICE guidelines, a large proportion of people with anxiety and depression do not receive this intervention (Scottish Executive, 2006; Layard *et al*., 2006). It is estimated that only a quarter of people receive treatment and this mostly involves medication, with only 2 per cent having seen a psychologist in the last year (Layard *et al*., 2006). This demonstrates the need to improve the availability of psychological interventions, particularly CBT, and computer-guided CBT could contribute to this.

1.3 Policy Context

UK health policies drive services to improve the delivery of psychological interventions for anxiety and depression (Scottish Executive, 2006; Department of Health, 2001, 2007). This includes reducing waiting times, increased access to evidence-based psychological interventions (especially CBT) and a greater range of interventions for varying levels of need, including structured self-help interventions (Matrix, 2008). It is also critical that services are cost-effective with limited NHS resources (Delivering for Health, 2005).

1.3.1 Waiting Times

Waiting times are a key emphasis in Government policies, which describe negative effects of waiting that include worsening of patients' problems and reduced effectiveness of treatment (Delivering for Health, 2005; 18 Weeks: The Referral to Treatment Standard, 2008). These documents highlight distress caused to patients and consequences on employment and family circumstances. Unsatisfactorily long waiting times for first appointments are also been shown to increase the rate of nonattendances (Trusler *et al*. 2006). Reducing waiting times requires innovative management of services, especially with the Scottish Government target of 18 weeks from referral to first appointment (18 Weeks: The Referral to Treatment Standard, 2008).

1.3.2 Increasing Access to Psychological Therapies

Growing evidence for psychological interventions, together with the economic burden of anxiety and depression, has led to a drive to increase the availability of psychological therapies, especially in primary care settings (Layard *et al*., 2006; Scottish Executive, 2006; Department of Health, 2004 & 2007; Kerr, 2005). Considering the scale of mild to moderate mental health problems, services must be re-designed to increase access to a broader range of evidence-based psychological interventions, not just individual psychological therapy, which is expensive and unable to meet demand.

Results from the national evaluation of the 'Doing Well by People with Depression' programme (Scottish Executive, 2006) emphasized the value of a range of psychological and psychosocial interventions in primary care, including self-help material. One commitment in the policy document 'Delivering for Mental Health' (Scottish Executive, 2006, p.4) is to *"increase the availability of evidence-based psychological therapies for all age groups in a range of settings and through a range of providers"*. In addition, forms of self-help are encouraged so patients can facilitate treatment themselves, especially for those who find it hard to access services for example those living in rural areas (Kerr, 2005). Therefore, computer guided CBT could offer such a method of improving access to psychological interventions.

1.3.3 The Provision of Self-Help in Stepped Care

The Scottish Executive's policy document 'Delivering for Mental Health' (Scottish Executive, 2006) states that care should be matched appropriately to a patient's level of need and one method of doing this is with a 'stepped care' treatment model, which offers different levels of treatment options to target the appropriate level of need for the patient. This aims to be more efficient by applying treatment that is effective while being least restrictive to the patient and least costly, therefore minimizing spending on high cost resources (Bower & Gilbody, 2005). The lowest intensity treatment, such as self-help, is given initially and monitored, then 'stepped up' to a higher intensity if the problem is not resolved (van Straten *et al*., 2006). Alternatively, in 'matched care', a patient is assessed first by a professional then directed to the intervention considered most appropriate for their needs (van Straten *et al*., 2006). Whether stepped care, matched care or alternative integrated models are used, the consensus is that more low intensity self-help interventions are required (Scottish Government, 2008; NICE, 2009) and research is needed into integrating these interventions in services and determining whether they are acceptable to patients and professionals (Bower & Gilbody, 2005).

1.3.4 Summary

Policies directing change within the National Health Service are driving the provision of evidence-based psychological interventions for anxiety and depression (notably CBT), efficient use of resources and greater availability of low-intensity self-help interventions. More research on implementing CBT is needed, with frameworks of recommended treatments being addressed in current Scottish policy (Scottish Government, 2008). It is evident that it is no longer possible, or necessary, to always provide individual psychotherapy and other methods must be explored. Research into implementing CCBT for anxiety and depression is therefore of considerable importance.

1.4 Low Intensity Psychological Interventions

The implementation of CCBT must be considered within the context of existing low-intensity interventions already recommended in treatment guidelines, in particular other types of self-help.

1.4.1 Self-Help

Over the last twenty years, low-intensity self-help interventions have developed into a valuable *"health technology solution to volume and demand"* (Richards, 2004, p.117). This range of treatment methods involves either minimal or no contact with a professional, which enables patients to direct treatment themselves, from information provided, to improve their ability to manage their own difficulties (Department of Health, 2003). The aim is not only to increase knowledge but also teach skills so that patients can learn to self-manage (Williams & Whitfield, 2001).

Various self-help formats now exist, most commonly books or manuals, with others including audio or video tapes and more recently, computers (Lewis *et al*., 2003). They are devised for a number of problems, including anxiety, depression, smoking, eating disorders and insomnia (Marks *et al*., 2007). Self-help can be a treatment replacement or an adjunct (or partial treatment) alongside face-to-face therapy (Van't Hof, 2009). It can be 'guided' or 'unguided' depending on whether contact with a support person is involved (Van't Hof, 2009). Guided self-help contact is designed to direct patients through material rather than develop a therapeutic relationship (Marks *et al*., 2007). Support can vary in frequency and duration and is usually telephone, email or brief face-to face contact, provided when requested or actively arranged at scheduled times (Williams & Whitfield, 2001).

1.4.2 Evidence-Base for Self-Help with Anxiety and Depression

Variation in the content and delivery of self-help creates challenges in evaluating and developing evidence-based packages and procedures. Reviews draw encouraging but cautious conclusions for effectiveness, but there is a lack of good quality research and it

is mostly based on written materials (Bower *et al*., 2001; Lewis *et al*., 2003; Papworth, 2006; Hirai & Clum, 2006). It is agreed that more benefits occur with some degree of support, but the amount required is unclear (Gellatly *et al*., 2007; Hirai & Clum, 2006; Lewis *et al*., 2003).

Self-help research is limited as it generally involves 'treatment as usual' controls or non-clinical selected samples, rather than evaluations in clinical settings or comparisons to other interventions. Reviews have found an association between the design of self-help studies using non-clinical participants and effectiveness (Bower *et al*., 2001; Gellatly *et al*., 2007; Papworth, 2006). Self-selection in non-clinical samples results in higher motivation and expectations, which may bias outcomes (Papworth, 2006). A systematic review of guided and unguided bibliotherapy in eight randomised control trials concluded they were *"modestly clinically effective overall"* with an average effect size of 0.41 (Bower *et al*. 2001, p. 844). However, wide variation existed in effect sizes, none were naturalistic designs and most studies were of poor quality, with problems such as small samples and high attrition.

Few studies examine the effectiveness of self-help compared to individual therapy. A systematic review of 13 meta-analyses found medium to large effect sizes for self-help, but effectiveness compared to face-to-face therapy was uncertain and differences in support were not considered (Van't Hof *et al*., 2009). A larger systematic review and meta-analysis of 21 studies concluded that guided self-help was comparable to face-to-face therapy for anxiety and depression (Cuijpers *et al*., 2010). However, this review was limited in its transferability to clinical settings, as most studies used highly selected non-clinical samples and the face-to-face therapy provided varied, often involving motivational interviewing or relaxation rather than CBT.

CBT-based self-help has the strongest evidence-base and is recommended for mild to moderate anxiety and depression in NICE guidelines. A meta-analysis of 34 randomized controlled trials using a variety of self-help interventions found CBT approaches had greater effect sizes (Gellatly *et al*., 2007). That said, a recent study compared different

online self-help interventions for depression and found no difference between CBT and problem-solving approaches (Warmerdam *et al*., 2010) so more research is needed into self-help mechanisms of change.

In summary, self-help can be effective for some motivated individuals with less severe difficulties, especially if it is guided and CBT-based, but more good quality studies are needed. Mechanisms of change remain unclear and variation found in outcome studies requires further research. Research is also needed to compare different methods of self-help and examine how best to implement self-help in clinical settings (for example which interventions to offer, and how support is provided). This includes considering the position of CCBT, with its unique technology-based self-help format, alongside other low-intensity self-help interventions.

1.4.3 Alternative Low-Intensity Interventions

Written materials are the most common low-intensity self-help format (e.g. Bower *et al*., 2001; Lewis *et al*., 2003). One way of implementing these in clinical settings has been with 'bibliotherapy' schemes in collaboration with libraries, enabling clinicians to prescribe recommended books (Chamberlain *et al.,* 2008). Other potentially promising low-intensity interventions are discussed briefly below.

Groups

Group work can vary in psychological approach or format (e.g. CBT) and can improve the efficiency of delivering self-help (Lewis *et al*., 2003). Patient participation is usually involved although one format developed in Scotland uses a didactic lecture style to target large audiences, designed to be less intimidating with no need to talk and the opportunity to bring someone (White, 1997). This course is delivered in some regions of NHS Fife, where the present study took place. Another example of an innovative group design is one that trains patients to facilitate future groups themselves and although the evidence-base so far is small, results have been encouraging in terms of effectiveness and cost-effectiveness (Den Boer *et al*., 2007).

Guided Self-Help Clinicians

Low-intensity mental health workers have been trained to deliver guided self-help for patients with mild to moderate problems, with encouraging outcomes (Clark *et al*., 2009; Lovell *et al*., 2003). This provides a degree of human contact to guide the use of self-help (often written CBT-based materials) within a limited number of sessions face-to-face or by telephone. Many are employed in English 'Improved Access to Psychological Therapies' (IAPT) sites (Clark *et al*., 2009) and those in Scotland include 'Advice Coordinators' in NHS Fife, where the present study took place.

Technology-Based Interventions

Videoconferencing, telephones (telehealth) and computers offer remote interventions that can provide an element of human contact in a way that increases access for some patients who might struggle to attend face-to-face appointments, for example those with reduced mobility or who living remotely (Bee *et al*., 2008). A recent meta-analytic review of 13 technology-based studies, mainly using the telephone, produced encouraging but limited results, with more good quality studies required (Bee *et al*., 2008).

1.5 Computer-Guided CBT (CCBT)

1.5.1 Overview

With the current demand for psychological therapies, especially low-intensity CBT-based interventions, computers may offer a much-needed resource. Potential advantages over other self-help methods include their interactive nature, which may increase adherence and facilitate learning, the ability to tailor material to individuals to some extent, ease of auditing progress and possible cost-effectiveness (Marks *et al*., 2007). As with other technology-based interventions, CCBT could also improve access for those struggling to attend face-to-face appointments, perhaps due to stigma or living remotely (Hayward *et al*., 2007). On the other hand there may be disadvantages, for example the format or lack of human contact may be difficult to use, or unacceptable, for some.

1.5.1.1 Definition

Different terms and ways of accessing computerised psychological interventions exist, which creates challenges when trying to compare the research. This study uses the term 'computer-guided CBT' (CCBT) to describe the delivery of a CBT-based intervention in a computer format using the internet or a computer-program. The study focuses on CCBT for mild to moderate anxiety and depression, although packages exist for a range of problems (Marks *et al*., 2007).

1.5.1.2 Methods of Access

Programmes can be accessed a number of ways, such as a stand-alone computer package, online intervention or hand-held device (Marks *et al*., 2007) and locations can be at home or at appointments usually in community or health locations, such as libraries or GP practices. As with other methods of self-help, it can be used as an alternative treatment or an adjunct alongside a therapist-led intervention and can be guided or unguided (Kaltenthaler *et al*., 2006). If guided, CCBT support can vary in frequency, duration and modality (Marks, 2007). Variation in design, content and delivery of CCBT creates difficulties when comparing studies. This variation is demonstrated below in the descriptions of two programmes used in the researcher's CCBT pilot project: *Living Life to The Full* (Bexley Borough Council) and *Beating the Blues* (Ultrasis).

Living Life to the Full (LltF)

Living Life to the Full (*LltF*) is a freely accessible online website intervention using a CBT-based self-help approach. It involves 13 separate 45-60 minute modules, the first of which is compulsory but the rest are optional depending on the individual's needs. It can be used without support but is recommended with regular (fortnightly) telephone support to help with technological issues and motivation (Bexley Care Trust, 2008). Some studies have also included introductory and final face-to-face appointments (Pittaway *et al*., 2009).

Beating the Blues (Btb)

Beating the Blues is a computer programme using a CBT-based self-help approach with eight 50 minute weekly sessions. It is designed to be accessed by appointments in community locations where some minimal technical and motivational support is available, such as libraries, health centres or GP surgeries. Individuals can also contact support via email. Each session includes brief self-report ratings that are able to identify suicidal alerts, and homework and progress reports are also provided (Ultrasis).

1.5.2 Clinical Effectiveness of CCBT with Anxiety and Depression

As Table 1 (on the next page) shows, most studies into effectiveness of CCBT use selected samples and controlled studies. There is widespread agreement, with varied levels of confidence, that some CCBT packages are more effective for anxiety and depression than treatment as usual or waiting list controls (Kaltenthaler *et al*., 2006; Kaltenthaler *et al*., 2008; Ferriter *et al*., 2008; Marks *et al*., 2007; Spek *et al*., 2007; Titov, 2007). Some propose certain CCBT packages are comparable to therapist-led CBT (Kaltenthaler *et al*., 2008, Titov, 2007) or even more effective (Marks *et al*., 2007) but others disagree (Ferriter, 2008).

1.5.2.1 CCBT Randomised Controlled Trials (RCTs)

Randomised controlled trials (RCTs) are considered high quality research, critical for informing treatment guidelines, and several carried out with CCBT show a range of effect sizes (Marks *et al*., 2007). These include studies on *Moodgym* (Christensen, *et al.* 2004), *Beating the Blues* (Proudfoot *et al*., 2004), *Fearfighter* (Marks *et al*., 2004) and *Overcoming Depression on the Internet (ODIN)* (Clarke *et al*., 2002 & 2005). A detailed meta-analysis of 12 RCTs found large effect sizes for those receiving support (*Beating the Blues* and *Fearfighter*) and for anxiety but small effect sizes without support (*ODIN* and *Moodgym*), although differences between anxiety and depression were inconclusive as they may have been due to differences in support and by smaller samples in anxiety studies (Spek *et al*., 2007). Kaltenthaler *et al*. (2008) also concluded support gave greater effect sizes.

Table 1 Summary of CCBT reviews

Review	**Type of review**	**Studies**	**Conclusion**	**Areas of uncertainty / further research**
Kaltenthaler *et al*., 2006	Systematic review	20 mixed method studies: 10 dep. 10 anx.	Some CCBT as effective as therapist-led CBT & more than treatment as usual (TAU). Weak cost analysis inconclusive.	CCBT in clinical settings alongside other interventions, low uptake, patient preference, therapist involvement, cost-effectiveness and unbiased research needed.
Spek *et al*., 2007	Meta-analysis	12 RCTs: 7 anx. 5 dep.	Large mean effect size for studies with support (1.0) & for anxiety (0.96). Low effect size for unsupported (0.27) & depression (0.26). Compared with TAU only. Higher effect for anxiety may be due to support.	More good quality studies needed on a larger scale. More research into relevance of support.
Marks *et al*., 2007	Narrative review	175 mixed method studies	Effectiveness encouraging but not conclusive. Some CCBT more effective than WL/TAU, some equal or better than therapist-led CBT. Wide range of effect sizes & varied studies. Effect influenced by e.g. type of package & support.	More research into attrition, type and frequency of support required, helpful aspects of programmes and how to implement CCBT in clinical settings.
Titov, 2007	Non-systemic review	24 RCTs: 8 dep. 14 anx. 2 mixed	Effective for depression & anxiety with support, may be comparable to therapist-led CBT. Unsupported CCBT has higher attrition but may still offer some benefits. Some patients can find CCBT acceptable.	More research into implementing CBT in clinical settings, system management, cost-effectiveness, acceptability to patients and clinicians,
Kaltenthaler *et al*., 2008	Systematic review	4 RCTs on dep.	3 of 4 studies show effectiveness, 1 without any form of support was not effective. High drop outs and limited reporting of attitudes to CCBT	More good quality studies needed, comparisons of CCBT to other types of interventions, research into uptake, application in clinical settings and attitudes to CCBT
Ferriter *et al*., 2008	Systematic review	8 RCTs on panic/ Phobia	CCBT may be superior to relaxation and WL controls but not therapist-led CBT	Drop outs, acceptability and need for good quality unbiased research

Despite the high regard for RCTs, they are limited in their application to real life clinical settings, so more naturalistic studies are needed. Controlled trials tend to recruit fewer clinical samples that are self-selected, creating potentially biased samples likely to be highly motivated and educated. For example, Christensen *et al.* (2004) sent questionnaires to the general public, who then opted in to the study before being selected for suitability. It is also hard to compare controlled trials of CCBT as study designs vary, such as in computer programme used, inclusion criteria, support systems provided and outcome measures used (Marks *et al*., 2007). For example, Kaltenthaler *et al*. (2008) reviewed four studies of three different computer programmes that varied in frequency and type of support, number of sessions as well as content: *Moodgym, Overcoming Depression on the Internet (ODIN)* and *Beating the Blues* (Christensen, 2004, Clarke *et al*., 2002, Clarke *et al*., 2005; Proudfoot *et al*., 2004). Some reviews have highlighted high drop-out rates (Ferriter *et al*., 2008; Kaltenhaler *et al*., 2008) but studies can often fail to report information on recruitment (Proudfoot *et al*., 2004).

1.5.2.2 CCBT Mixed Methodology Reviews

Although most studies are controlled trials, reviews using a broader methodology of studies also draw encouraging conclusions for the effectiveness of CCBT but highlight important areas for further research (Kaltenthaler 2006; Marks *et al*., 2007; Titov, 2007). One unbiased review, which informed NICE guidelines, rigorously selected ten studies on depression and ten on anxiety and only found sufficient evidence of effectiveness for *Beating the Blues* for depression and *Fear Fighter* for phobia/panic (Kaltenthaler *et al*., 2006). However, this was due to a lack of studies rather than poor results of other programmes, showing a need for more good quality independent research. A large review of 175 studies including unpublished data found a wide variety of effect sizes even among the same packages, from very small (0.2) to great (4.3) (Marks *et al*., 2007). This indicates that other variables influence outcomes and examples of variations in studies include type of package, setting, outcome measures and support (Marks *et al*., 2007). Titov *et al*., (2007) examined application to clinical settings and concluded that CCBT can be effective, especially with support, but low uptake and attrition occurred in many studies, especially when unsupported. Low uptake and high drop outs indicate a

need to investigate acceptance of CCBT, both in patients and clinicians (Ferriter, 2007; Kaltenthaler, 2006; Titov, 2007). Crucially, there is a lack of unbiased research on the implementation of CCBT, for example its position alongside other interventions and recommendations for delivery (Kaltenthaler, 2006; Marks *et al*., 2007; Titov, 2007).

1.5.2.3 Comparisons to Other Forms of Self-Help

CCBT has been found to be equally effective as other forms of self-help (Gellatly *et al*., 2007; Van't Hof *et al*., 2009). Gellatly *et al*. (2007) found no difference in effect size between written self-help and CCBT for depression in a meta-analysis of 34 randomized controlled trials using rigorous inclusion criteria. This was also the case in a systematic review of 13 meta-analyses, including nine CCBT studies that were found to be equally as effective as self-help books or audio-tapes (Van't Hof *et al*., 2009). However, this review did not describe inclusion or exclusion criteria, so its quality is questionable. Comparing self-help interventions is hard, due to vast differences between them. Studies are mostly randomised controlled trials, so lack application to real clinical settings. Nevertheless, CCBT seems comparable in effectiveness to other self-help interventions, though a number of variable factors could be involved, for example patient or therapist intervention preferences, or type of self-help package. Research should try to identify important elements of self-help, including CCBT, to explain variation in outcome and agree standardised materials and procedures of delivery.

1.5.2.4 Comparisons to Face-to-Face Therapy

Some reviews propose that CCBT is as effective, or more effective, compared to face-to-face therapy but most are authors with vested interests in computer packages (Cavanagh & Shapiro, 2004; Marks *et al*., 2007). Kaltenthaler *et al*. (2006) concluded that there was some evidence for certain CCBT packages being as effective as therapist-led CBT for depression/anxiety and phobia/panic in their systemic review of 20 mixed methodology CCBT studies. However, this conclusion was made from just two *Fear-fighter* studies and one *Beating the Blues* study by authors involved in developing CCBT packages (Kenwright *et al*., 2001; Marks *et al*., 2004 & Proudfoot *et al*., 2004). Marks *et al*. (2007) review a larger number of studies but, despite concluding CCBT can be more

effective than face-to-face, comparison studies are still small in number so their conclusion is limited. More good quality research is required before such conclusions can be drawn.

1.5.2.5 Summary of Effectiveness

Evidence indicates certain CCBT packages can be effective for some people with mild to moderate anxiety and, perhaps to a slightly lesser extent, depression (Ferriter *et al*., 2008; Kaltenthaler *et al*., 2006; Kaltenthaler *et al*., 2008; Marks *et al*., 2007; Spek *et al*., 2007; Titov, 2007). CCBT is now included in treatment guidelines for mild to moderate anxiety and depression, specifically the programmes *Fearfighter* for panic/phobia and *Beating the Blues* for depression (NICE, 2006, 2009 & 2011). These are recommended alongside other low-intensity interventions of psychosocial CBT-based self-help or guided self-help, such as books and groups for anxiety and individual CBT-based guided self-help or structured group physical exercise programs for depression.

However the CCBT evidence-base has limitations, with most studies involving controlled, highly selected, sometimes non-clinical samples. Studies are also predominately carried out on a select number of packages, mainly *Beating the Blues,* by researchers that have vested interests in programmes, therefore studies are potentially biased. Different variables across studies appear to influence outcomes, such as type of support, CCBT programme and even evaluation measures. More good quality independent research is needed in real-life clinical settings to investigate efficacy and optimal methods for implementing CCBT, including variables influencing outcomes, comparisons to other interventions and follow-up studies. Reports of low uptake and high drop outs in CCBT studies further indicate the need to investigate implementation and acceptability to both patients and clinicians (Kaltenhaler *et al*., 2008; Waller & Gilbody, 2009).

1.5.3 Cost Effectiveness

Currently there is limited evidence that CCBT is actually a cost-effective intervention due to the lack of cost analyses published, particularly in clinical settings (Titov, 2007). Kalthenthaler *et al* (2008) and Marks *et al*. (2007) concluded that CCBT used less therapists' time and is therefore cost-efficient, but this is a weak conclusion because it was based on only one cost-effectiveness study (McCrone *et al*. 2004). McCrone *et al*. (2004) tried to carry out an economic evaluation of *Beating the Blues,* but cost-effectiveness was unclear and seemed dependent on length of treatment required. This was also a potentially biased study because the author had a financial interest in the package. In reality, costs are likely to vary depending on throughput, package used, whether these are freely accessible or under license and how support is offered (Marks *et al*., 2007). It would also depend on other self-help options available within a service and their relative costs. This is important to ascertain when considering the integration of CCBT in services. Currently online packages such as *Living Life to the Full* and *Moodgym* are freely accessible whereas a programme such as *Beating the Blues* are not.

1.5.4 Implementation in Clinical Settings

For a low-intensity self-help intervention to have efficacy it must provide *"significant health gain equivalent to that of traditional psychological therapies, at least for a proportion of patients",* be an efficient use of resources and be *"acceptable to patients and professionals"* (Bower & Gilbody, 2005, p. 13). Despite evidence for the effectiveness of some CCBT packages, efficacy needs more research with uncertainty surrounding the practical implementation of CCBT and acceptability due to variation in delivery and low uptake (Green & Iverson, 2009; Kaltenthaler, 2008; Waller & Gilbody, 2009). The implementation of CCBT will be critically discussed, highlighting potential barriers to uptake and the limited research in clinical settings.

1.5.4.1 Clinical Outcomes in Clinical Settings

Effectiveness of CCBT has been associated with non-clinical settings (Gellatly *et al*., 2007), but uncontrolled studies in clinical settings also report significant improvement in

clinical outcomes (Bennett *et al*., 2006; Cavanagh *et al*., 2006; Dickson & Carroll, 2009; Learmonth *et al*., 2008, Learmonth & Rai., 2008; Marks *et al*., 2003; Pittaway *et al*., 2009; Van den Berg *et al*., 2004). Some involved small samples so statistical power is weak, for example Van den Berg *et al*. (2004) analysed data from only 13 respondents, dropping to nine at 6 month follow-up, and Bennett *et al*. (2006) just 36. However, larger analyses also exist, for example 104 inCavanagh *et al*. (2006) and an impressive 394 across 5 years (Learmonth *et al*., 2008). Some studies failed to use intention to treat analysis if low uptake and drop-outs arose, only showing effectiveness for completers (Bennett *et al*., 2006; Marks *et al*., 2003; Pittaway *et al*., 2009; Van den Berg *et al*., 2004). Those that carried out this analysis tended to have higher uptake and significant treatment gains still occurred (Cavanagh *et al*., 2006; Learmonth & Rai, 2008; Learmonth *et al*., 2008). Patient satisfaction was reasonably good in those that investigated it (Bennet *et al*., 2006; Hayward *et al*., 2007; Marks *et al*., 2003), but may be biased towards those finishing CCBT who are more likely to be satisfied, rather than those that drop-out or never start. Therefore, some CCBT packages in clinical settings can be effective and acceptable. However, variation exists in numbers that complete, so more research is need on reasons for this and other factors need to be examined that influence uptake and outcomes.

1.5.4.2 Variation in Delivery and Access

The variation in type of CCBT and method of delivery appears to influence effectiveness but precise recommendations are uncertain (Gellatly *et al*., 2007; Marks *et al*., 2007). The provision of support has been found to be more effective than no support (Gellatly *et al*., 2007) and is considered important to patients (Bennett *et al*., 2006). Scheduled support has been found to be more beneficial for adherence and progress than requested support but more research into other support variables is needed, including frequency and type of support, for example email or telephone (Marks *et al*., 2007). The most intensively researched programme, *Beating the Blues*, has developed recommendations for how it is implemented with support, which will be consistent across studies, however it is unclear what evidence underlies this (Ultrasis). This support involves brief non-clinical contact at appointments, an introductory video and orientation at the first

appointment (Cavanagh *et al*., 2006). Nevertheless, variation can still arise in the background and training of support staff, for example employing a research assistant (Hetherton *et al*., 2004) or secretarial staff (Van den Berg *et al*., 2004), which could impact on quality of support and outcomes.

Some CCBT programmes are accessed at home (e.g. *Living Life to the Full)* and others at appointments in community settings, such as GP surgeries, libraries and health centres (e.g. *Beating the Blues*). Few studies have compared locations or indeed packages, to find out which are more accessible and acceptable to patients. This is likely to involve individual preferences, as some prefer to get out to appointments and others prefer the flexibility of home access or evening appointments (Bennett *et al*., 2006). Location and support may influence uptake, with evidence that this has caused patients to discontinue, for example feeling embarrassed to use CCBT in a public location (Bennett *et al*., 2006).

1.5.4.3 Acceptability: Drop Outs

High drop-outs have occurred in some CCBT studies, which could reflect problems of acceptability to patients and therefore reduced efficacy (Titov, 2007). A systematic review of 16 guided and unguided CCBT studies found wide ranging drop-outs, from 0 to 75 per cent, with a mean of 31.75 per cent, which they concluded was comparable to other psychological treatments (Kaltenthaler, 2008). The study also found that for those that used CCBT, expectancies and satisfaction was reasonably positive. However, the review involved varied study designs so comparisons are hard and for studies with high drop-outs, it is important to understand why this might be. Half the studies were controlled trials so selection of participants is likely to be biased towards those more motivated to complete, which was found when public and trial participant rates were compared in one study (Christensen *et al*., 2004). Examples of proportions of completers in studies are 31 per cent (Bennett *et al*., 2006), 45 per cent (Van den Berg *et al*., 2004) and 51 per cent (Marks *et al*., 2003). Drop-outs could mean poor motivation, patient dissatisfaction or dislike of the intervention, which may reflect the specific package or CCBT generally. However drop-outs may also reflect the fact that some patients have reached sufficient levels of improvement (Bennett *et al*., 2006; Van den Berg, 2004).

A more encouraging adherence rate of 71 per cent arose in a five year study, perhaps due to increasing staff efficiency and experience in identifying and supporting patients over this time period (Learmonth *et al*., 2008). However, if drop-outs are also defined as from the point of referral, before starting 33 per cent dropped out after being referred. Cavanagh *et al*. (2006) reported 62 per cent completed, but analysis was only carried out on 47 per cent, seemingly due to incomplete measures. One of the few studies not undertaken by developers of CCBT packages (Hayward *et al*., 2007) reported 74 per cent completed from 53 that started, but others were lost prior to this from 89 referrals. Variation in drop-out rates could be due to different study designs, such as methods of recruitment, but this is difficult to assess as recruitment details are often not reported. One study described greater effort taken to engage patients at the start with an introductory video and first appointment booked immediately after agreeing and consenting to take part (Cavanagh *et al*., 2006), whereas this process in other studies was unclear (Bennett *et al*., 2006; Van den Berg *et al*., 2004). Although it is hard to compare drop outs among different studies, it is important to examine this more carefully and identify ways to improve adherence.

1.5.4.4 Acceptability: Patient uptake

Another measure of efficacy, in terms of usability and acceptability, is the proportion of patients willing to try CCBT or indeed are offered it in the first place (Kaltenthaler *et al*., 2008). The number of patients recruited has been found to be low, although few report recruitment and uptake information and various different ways of recording this exist (Kaltenthaler *et al*., 2008; Waller & Gilbody, 2009). 'Uptake' usually refers to the proportion of patients starting after being offered CCBT or referred, sometimes reflecting indications of patients' willingness to engage. However 'uptake' into CCBT could also reflect clinicians' willingness to engage in using it and, consequently, their role in the use of CCBT by patients.

In the systematic review on acceptability by Kaltenthaler *et al*. (2008), initial uptake into CCBT was lower than expected, although there was limited information on the referral process. Three studies reported on the referral or recruitment process, such as

recruitment methods or patient take-up rates and uptake ranged from 3.3 per cent to 25 per cent. In these cases, uptake was the proportion of patients who agreed to begin CCBT once offered it, either in a pre-arranged assessment appointment in a clinical setting (Whitfield *et al.*, 2006) or an opt-in system to an internet site in a non-clinical setting (Clarke *et al*., 2002 & Clarke *et al*., 2005). It is also important to consider that patients' refusal to use CCBT may be due to reluctance to participate in research. Nevertheless, there is evidence that reasonable numbers of patients drop out before starting or refuse to use CCBT in the first place.

More research into patient acceptance is needed but clinician acceptance and the role on uptake is also important. It is hard to assess the role of clinicians in patient uptake from the limited research. More information is needed on the point of referral to CCBT, the process of initial engagement and factors predicting referrals.

1.5.4.5 Point of Referral

Different points of referral have been used in studies, for example *Beating the Blues* has been accessed in primary and secondary care (Cavanagh *et al*., 2006), solely GPs (Fox *et al*., 2004), a secondary care community mental health team (Van den Berg *et al*., 2004), a CBT specialist service (Learmonth *et al*., 2008) and a CCBT open-access clinic (Mark *et al*., 2003). It is important to examine different access points to determine which is most effective, with consideration of suitability of patients, cost, outcomes and accessibility. Cavanagh *et al*. (2006) reported no differences in drop-outs or clinical outcomes between primary and secondary care but a significant effect with time to treatment. Those in primary care showed lower severity of symptoms but the study did not provide data on any difference in referral numbers between levels of care.

The point of referral may also be important in preparing patients for using CCBT and therefore influence uptake and drop outs. Information provided by clinicians may help *"overcome some of the misconceptions patients might have about the nature of treatment"* (Khan *et al.*, 2007, p.210). An evaluation of patient experiences of CCBT

highlighted the importance of the point of referral, for example in providing information to help patients start and reducing anxiety of anticipated computer use (Bennett *et al*., 2006).

1.5.4.6 Clinicians' Influence on Referral Process

Referral frequency is rarely reported in CCBT studies, however both Marks *et al*. (2003) and Van den Berg *et al*. (2004) described having slow referrals initially that increased over time. Although Marks *et al*. (2003) involved self-referral, part of the advertising was targeted at health care professionals in the hope that they would direct patients and the authors believed that "*the referral rate was greatest in the last few months as news of the clinic spread"* (Marks *et al*., 2003, p.58). This suggests the importance of clinicians' awareness and the consideration of training for potential referrers. The attitudes of clinicians was raised by Van den Berg *et al*. (2004), who described mixed views of clinicians when CCBT was proposed and that referrals increased "*once the service began to feel confident about the programme*" (p. 511). This also shows attitudes can change and improve over time.

The importance of referrers' attitudes was explicitly stated in one study with high uptake, that *"positive attitudes in service-providers influence uptake immensely"* (Learmonth *et al*., 2008, p.121). This study may have benefitted from using an established specialist CBT service as the point of referral as referrers would be more accustomed to a lower-intensity CBT approach. One study had problems recruiting into a randomised controlled trial in a GP surgery and discovered this was due to resistance from GPs (Hetherton *et al*., 2004). Only five participants were recruited in 3 months and 17 in a year. GPs reluctance to refer was found to be mainly due to the belief that CCBT was a less effective intervention and that recruiting to the research took time (Hetherton *et al*., 2004). GPs experienced conflicting attitudes, recognising a need for research but believing it may compromise patient care (see theory of cognitive dissonance, section 1.6.1.3.1).

Another important aspect of the referrers' decision to offer CCBT could involve other available interventions and whether preferences arise, not only for the patient but also the referrer. When different choices of low-intensity guided self-help interventions were available alongside CCBT, such as workbooks, CCBT was *"interestingly rarely taken up by patients"* (Clarke *et al*., 2009, p. 916). In a trial of *Beating the Blues* in secondary care, clinicians could also refer to their usual options of nurse therapists or primary care counselors and referrals were described as slow initially (Van den Berg *et al*., 2004). These studies suggest other options may be preferred, especially when CCBT is first implemented. Many CCBT studies have not provided options so this issue does not arise, for example having CCBT-only clinics (Marks *et al*., 2003). However, it is unclear how much of an influence alternative treatment options have on clinicians referring and also on patients' choices.

1.5.4.7 Summary of Research on Implementing CCBT

Practical aspects concerning the delivery of CCBT in clinical settings, such as the provision of support, location of access and point of referral, are currently unclear, and may impact on access (Marks *et al*., 2007) so more studies on implementing CCBT are required. In fact, there are reports that implementing CCBT is not straight-forward and is a "*high maintenance service to run*" (Fox *et al*., 2004). Most studies are likely to be biased as researchers have vested interests, particularly in *Beating the Blues* (e.g. Cavanagh *et al*., 2006; Learmonth *et al*., 2008; Marks *et al*., 2003) so more independent studies are needed. Critically, studies indicate barriers to uptake that need further investigation (Waller & Gilbody, 2008) and few give information on the referral process in clinical settings, which is a potentially crucial aspect of uptake (Kaltenthaler, 2008). Studies that provide referral information indicate referrers may be resistant to directing patients to CCBT, at least initially (Hetherton *et al*., 2004; Van den Berg, 2004), so research is needed into clinicians' views of CCBT and of implementing it in services.

1.6 Clinicians' Views and Use of CCBT

Some CCBT studies have examined patients' views through acceptability and satisfaction (Kaltenthaler *et al*., 2008) but clinicians' views have largely been neglected (Titov, 2007). Low uptake in CCBT studies not only raises questions of patient acceptability but also acceptability to clinicians and the influence on the referral process. Literature on increasing access to CCBT highlights the way in which resistance to change can arise from clinicians, as a result of unfamiliarity or skepticism (Williams & Martinez, 2008). Psychological theories of attitudes will be discussed in relation to clinicians' attitudes and referral behaviour together with research on clinicans' views and use of CCBT.

1.6.1 Psychological Theories of the Attitude-Behaviour Relationship

Attitudes are a fundamental, pervasive aspect of being human and their influence on behaviour has been heavily researched (Hogg & Vaughan, 2011). Different constructs and functions have been proposed; however, a broad definition is *"a summary evaluation of a psychological object captured in such attribute dimensions as good-bad, harmful-beneficial, pleasant-unpleasant..."* (Ajzen, 2001, p.28). Theories also propose an attitude *"precedes behaviour and guides our choices and decisions for action"* (p. 148, Hogg & Vaughan, 2011) but the attitude-behaviour relationship is not necessarily a direct one, as other factors can influence the strength of this association (Hogg & Vaughan, 2011).

1.6.1.1 Theories of Reasoned Action and Planned Behaviour

The theory of reasoned action understands and predicts behaviour through its relationship with attitudinal variables, using processes of beliefs, intentions and action (Ajzen & Fishbein, 1980; Hogg & Vaughan, 2011). Components of the model are subjective norms, individual attitudes towards the behaviour, behavioural intention and the behaviour itself (Ajzen & Fishbein, 1980). This suggests the influence of both individual attitudes and those of the individual's meaningful social groups. Actions are considered more likely if the individual has an internal intention, social norms are

favourable and the individual's attitude towards the behaviour is favourable. Therefore, if clinicians' attitudes towards CCBT or referring to CCBT are positive then they will be more likely to refer and vice versa. Additionally, views of social groups may influence referrals, for example if a professional group attitude is that therapeutic relationships are necessary for good psychological treatment, or fast access to treatment is a priority.

A modification of the theory of reasoned action is the theory of planned behaviour, which includes the influence of perceived control or ability over intended behaviour (Ajzen, 2001). In the present study, this could mean that if clinicians lack confidence in their knowledge of CCBT or in their ability to refer appropriately to CCBT they may be less likely to actually refer, and vice versa. Both theories provide useful frameworks for the relationship between attitudes and behaviour. However, most research on these theories involves health behaviour change (Ajzen, 2001), so its application to referral behaviour may be limited. Other variables may be relevant to referral behaviour, for example individual differences, the presence of alternative actions (for example options to refer to other interventions), or perceived attitudes of those outside the social group (i.e. patients).

1.6.1.2 Individual Differences

Individuals have their own cognitions and schemas, including biases and concepts of self that may increase or reduce the influence of attitudes on behaviour (Hogg & Vaughan, 2011). The theory underlying cognitive-behavioural therapy is that thoughts (cognitions) affect behaviour (Beck, 1976). In this case, a clinician's beliefs about interventions may include the need for a therapeutic relationship and if this is the case, their attitude towards CCBT may be negative. Alternatively, a clinician may believe that waiting for therapy is detrimental, so if CCBT offers faster access to help then their attitude would be positive. However, several different cognitions may relate to a particular behaviour, making a decision to act more complex, especially if cognitions conflict (see cognitive dissonance below). In addition, attention paid to information may vary, perhaps if a disconfirmation bias occurs when individuals are faced with an argument that disagrees

with their beliefs, leading them to discount alternative arguments more easily than those confirming pre-existing beliefs (Hogg & Vaughan, 2011).

Other individual differences influencing the attitude-behaviour relationship may be as specific as age. Early-adulthood was shown to have greater plasticity for attitude change (Visser & Krosnick, 1998), whereas age has also been found to have no effect (Tyler & Schuller, 2001). Both these studies used different samples and methods, so the difference may depend on the situation. In the present study, older clinicians with more experience may be more open to new ways of working or, alternatively, fixed on their current practice.

1.6.1.3 Additional Influences

Other factors believed to influence the relationship between attitudes and behaviour include the accessibility of attitudes, strength of attitudes, values or direct experience with the object of the attitude (Hogg & Vaughan, 2011). So in this study, clinicians' behavior could be influenced by strength of attitudes towards CCBT, how much they value face-to-face contact, or the extent of their familiarity with CCBT or computers. Other variables could include situational (or contextual) factors (Hogg & Vaughan, 2011). Therefore, attitudes may have less influence on behaviour if a system contributes to the decision to act. For example, the health care system may exert pressure to refer a certain number of patients to CCBT, to see patients within a certain time-scale, or, alternatively, other treatment options available may influence the chosen intervention.

1.6.1.3.1 Cognitive Dissonance

The theory of cognitive dissonance (Festinger, 1957) posits that when individuals are faced with opposing or inconsistent cognitions this creates psychological tension. In this case, the thought of referring to a technology-based, non-face-to-face intervention may cause conflict if beliefs exist that a therapeutic relationship is important, or that patients need someone to talk to. Attempts to reduce cognitive dissonance are thought to occur by changing one of the inconsistent beliefs, so attitude-behaviour discrepancies can

occur (Hogg & Vaughan, 2011). Individuals are also likely to avoid situations in which cognitive dissonance will arise to seek harmony or balance in their cognitions and attitudes (Frey, 1986), so clinicians may avoid referring to CCBT if this creates conflicting beliefs about treatment. However, the cognitive dissonance model has had some criticism and modification over the years (Hogg & Vaughan, 2011). It may be too simplistic and the notion that individuals struggle to hold conflicting points of views may be inaccurate. Nevertheless it does highlight that conflicting views can create tension and influence behaviour but perhaps this also depends on others factors, including the individual and the situation.

1.6.1.4 Summary

Psychological theories give some understanding of the relationship between attitudes towards CCBT and referral behaviour, indicating that implementation will not necessarily result in referrals. Even if patients are suitable, referrals will be influenced to some extent by clinicians' attitudes towards CCBT. However, theories are limited in predicting behaviour due to other attitudinal variables that might interact and influence behaviour to varying degrees. Potential variables include clinicians' attitudes, (professional) social norms, direct experience of the behaviour, systemic influences and individual differences such as cognitive biases. To investigate clinicians' attitudes and referral behaviour it is important to examine other variables or factors that may be involved. Research indicates that examining general attitudes is unlikely to predict specific behaviour due to other possible influencing variables, so greater success is gained from asking specific questions on specific behaviours (Hogg & Vaughan, 2011). Therefore it is not only important to ask clinicians' views of CCBT, but also how likely they think it is that they will actually refer to it.

1.6.2 Clinicians' Views and Use of Self-Help

Some survey-based studies have investigated clinicians' views and attitudes towards self-help. One survey of 364 respondents from the Counsellors and Psychotherapists in Primary Care organization showed a lack of support for self-help as a stand-alone intervention, and beliefs about self-help that were were related to intended use (Audin *et*

al., 2003). From 88 per cent that used self-help, 24 per cent used technology-based self-help and 96 per cent used reading material. Another survey found 88 per cent of therapists used self-help, with only 6.9 per cent who used CCBT compared to 98.7 per cent who used written materials (Keeley *et al.*, 2002).

Low use of CCBT may reflect negative attitudes but there may be other reasons, such as lacking knowledge of CCBT or its availability compared to written self-help. However Audin *et al*. (2003) did find that referrals were more likely if clinicians believed it was acceptable to patients and there were no motivational issues. Many recognised both advantages and disadvantages of self-help but viewed it as a tool to enhance individual therapy rather than replace it. Although results may not generalize to CCBT or other potential referrers, they do indicate that clinicians' views towards an intervention can influence patients' access.

Recent qualitative research also found that clinicians' views of self-help influence their use of them (Pratt *et al*., 2009). In this study, some clinicians did not believe that self-help addressed causes of mental health problems and needed convincing of its effectiveness, usefulness and accessibility before they were likely to use it. Also, clinicians' and service-users' views differed about self-help, with service-users generally more positive. This suggests clinicians may withhold self-help from patients who may in fact benefit, showing a need for further research into clinicians' views and the impact on access. Again this study is not specific to CCBT but does show a link between attitudes and referrals.

1.6.3 Clinicians' Views and Use of CCBT

A survey of the British Association for Behavioural and Cognitive Psychotherapies (BABCP) on CCBT found few were offering this to patients (Whitfield & Williams, 2004). Of the sample of 329 therapists, only 12 (2.4 per cent) said they offered CCBT and just five had used it as an alternative to therapy. Therefore, although many therapists use self-help (Audin *et al*., 2003; Keeley *et al*., 2002), CCBT is rarely offered and is

only small proportion of all self-help materials used. This suggests there is something specific to CCBT, rather than self-help, that results in few using it. It is unclear why this might be, but possibilities could include negative views of CCBT, lack of confidence in referring, or situational factors (in terms of availability of CCBT in services).

Whitfield and Williams (2004) reported that 90 per cent had not ruled out using CCBT in future, which also suggests negative attitudes may not wholly contribute to low referrals. Responses showed 62 per cent needed to learn more about CCBT before using it and 54 per cent required training, indicating opportunities to increase referrals. Other changes clinicians needed in order to refer included locations for using computers and more research into effectiveness of CCBT. In terms of their own computer literacy, few felt they needed to be more familiar with computers. No-one believed CCBT was more effective than individual therapy and most believed patients would expect less success and be less satisfied. Interestingly, in comparison to written material, few rated less benefits of CCBT despite the small numbers using it. In terms of CCBT use in future, 49 per cent had concerns but 81 per cent would consider it as a supplement to individual therapy and 46 per cent for those on a waiting list. Nevertheless, only 27 per cent said that they would consider CCBT being used as an alternative to individual therapy.

Whitfield and Williams (2004) provide useful evidence that clinicians' attitudes are a possible barrier to CCBT access and it is surprising this has not been researched more. However this is based on just one survey with a select sample from the BABCP and there was also no opportunity for clinicians to provide their own views in qualitative methods. Nevertheless, the low use of CCBT by clinicians is highlighted, as well as potential openness to using it in future. It shows attitudinal barriers exist, including beliefs about effectiveness and acceptability to patients. More information is needed on attitudinal variables and views from a range of professionals in clinical settings.

1.6.3.1 Clinicians' Views and Use of Online Therapy

Although views were not sought on CCBT specifically, two survey-based studies suggested associations between attitudes and use of online interventions (Mora *et al*., 2008; Wanberg *et al*., 2007). Wanberg *et al*. (2007) investigated attitudes to 'e-therapy' in terms of email therapy and short messages via mobile devices. From a large sample of 1040 psychologists in Norway, 45 per cent had used 'e-therapy', compared to 2.4 per cent found by Whitfield and Williams (2004). Mean attitude was neutral and only three per cent felt 'e-media' was unacceptable. The authors investigated clinician factors related to attitudes to e-therapy and e-therapy behaviour, such as age, length of career and therapeutic stance. There were no significant results for factors influencing attitudes, however attitudes and use of the internet were associated with e-therapy use. The study concluded that therapeutic stance was related to attitudes towards e-therapy, with CBT orientated therapists more positive than psychodynamic, but this was not in fact a significant result.

A survey of 138 psychologists in America by Mora *et al*. (2008) did find CBT orientated therapists significantly more positive than psychodynamic therapists towards internet-based interventions. However, results indicated few therapists would actually use these interventions or be willing to receive training, despite recognising a number of benefits such as increasing access to remote areas. This contrasts with results found by Whitfield and Williams (2004) that more would consider using CCBT in future. However Mora *et al*. (2008) did not investigate CCBT specifically but four different interventions: e-mail, individual chat, group chat and video-conferencing. Concerns included lack of non-verbal behaviour and difficulties establishing a strong working alliance. Respondents gave stronger endorsements for online interventions as a treatment adjunct rather than as an alternative, agreeing with Audin *et al*. (2003). Videoconferencing was the preferred intervention, perhaps due to the element of face-to-face contact. This study shows that although psychologists may recognize benefits of these interventions, they may still be reluctant to actually offer it.

1.6.3.2 Referrers' Evaluations of CCBT in Clinical Settings

Evaluations of clinicians' views on CCBT in clinical settings indicate positive reactions (Dickson & O'Carroll, 2009; MacGregor *et al*., 2009). MacGregor *et al*. (2009) asked referrers' views following a pilot of *Fearfighter* with support, with responses from 14 GPs and one CPN. Questions involved satisfaction with the service and perceived patient benefits rather than attitudes towards CCBT and referral behaviour. Nevertheless, responses were positive especially for increasing access in a rural location.

An unpublished report evaluated views of referring in a one year period to *Moodjuice* (unsupported online) and *Beating the Blues (Btb),* supported in locations including community centres and GP surgeries (Dickson & O'Carroll, 2009). Referrers were again GPs and focus groups were carried out with 17 GPs and nine practice or community centre staff. Forty per cent of GPs in the evaluation referred more than 30 patients to *Moodjuice* and only three per cent did not refer at all. Nearly all agreed *Moodjuice* was useful and nearly three quarters found *Btb* useful. Positive aspects included 'short waiting times' and 'self-management', with negative aspects including a preference for human contact and restricted access to programmes. Suggestions for changes included more support, more patient information and online access. However, it was hard to ascertain which intervention was preferred and how best to apply both in one service.

The evaluation studies by Dickson and O'Carroll (2009) and Hayward *et al*. (2007) both found significant clinical improvements using patient outcome measures. There may be a positive bias of responses from referrers who were most keen on it, nevertheless it certainly shows that clinicians (mainly GPs) can have positive experiences of CCBT in their service and find it beneficial for patients. However, it was not clear if clinicians were able to offer other self-help materials and therefore what their preferences (or patients' preferences) might be. Feedback was mainly limited to GPs and lacked information on the referral decision-making process so it would be useful to gather views of the referral process from a larger sample of clinicians with varied professional backgrounds.

1.7 Implementing Change: A Social and Organisational Context

Staff behaviour, in this case their referral behaviour, could be influenced by broader social-psychology processes, not just individual attitudes (discussed in section 1.6.1), It is therefore important to consider the present study within the context of social change and innovation in organizations. Public healthcare systems, such as the NHS, are highly complex and dynamic human organisations, due to the variety of influences involved, such as different professionals, patients, government and financial constraints (Iles & Sutherland, 2001). Consequently, attempts to change staff behaviour may face numerous challenges. The social-psychology and organisational literature are discussed below, to understand more about the impact of these systemic factors on reasons why staff behaviour change may, or may not occur.

1.7.1 Social-Psychological Models of Behaviour Change

Social-psychology theories focus on understanding the process of behaviour change though groups, rather than individuals (Gruneberg & Wall, 1984). A major influence in this research area is Lewin's field theory (Lewin, 1951) and his concept of 'force field analysis' (see also section 1.7.1.1, below, on organisational development). Field theory considers behaviour as being a function of the interaction between an individual and their environment, and influenced by the social groups of the individual (Gruneberg & Wall, 1984). Efforts to introduce behaviour change should therefore take into account both individual and social issues, and their contribution to barriers or drivers for change. Lewin (1951) proposed three steps for successful behaviour change in organisations: firstly the need to 'unfreeze' a current situation (such as beliefs or values), secondly, 'transition' to a new state and thirdly to 'freeze' or consolide the change.

Other social-psychological models also exist that attempt to explain behaviour change in groups (Hogg & Vaughan, 2011). For example, expectancy theory (Lawler, 1971) proposes that motivation to act is influenced by anticipated and preferred outcomes, which can be influenced by organisational factors, such as a pay reward. Social learning theory (Bandura, 1977) describes behaviour as socially learnt, through the modelling of behaviour observed in the social environment. Therefore, in relation to the present study,

social-psychology models propose that staff behaviour involves social or organizational drivers and resisters. Consequently, an investigation CCBT implementation and staff referral behaviour should consider these issues.

1.7.1.1 Organisational Development

Theories of group processes have been used to develop ways to facilitate change within organizations (Buchanan & Huczynski, 2004). Lewin's (1951) concept of 'force field analysis' assesses forces for ('driving') and against ('restraining') change, to analyse the viability of change and indicate what interventions could be used to modify the forces if necessary, to promote change occurring (Gruneberg & Wall, 1984). The 'force field analysis' concept asserts that when forces are increased or decreased, equilibrium forces act in response. Therefore to facilitate change, restraining forces should be reduced, rather than drivers increased, as restraining forces would increase in response to increased drivers (Iles & Sutherland, 2001).

The analysis of driving and restraining forces is a frequently applied strategy in change management and organizational development, and a variety of models exist (Buchanan & Huczynski, 2004). Two examples of change management models are Kotter's eight-step (Kotter, 2002) and Bridges' three step (Bridges, 2003) models, which have both been applied to healthcare settings (Campbell, 2008). Kotter (2002) believes that change should be managed by: increasing urgency to change, building a guiding team, creating a vision, communicating for buy-in, enabling action, creating short-term wins, not letting up and making the change stick (Campbell, 2008). Kotter (2002) describes these steps as having three stages: firstly, to create readiness to change; secondly, to engage the organisation and enable it to change; thirdly, to implement and maintain the change. These are similar to Lewin's (1951) 'unfreeze', 'transition' and 'freeze' stages described in section 1.7.1 above. Bridges (2003) considers change as a shift in identity, with three progressive stages that involve 'endings', 'the neutral zone' and 'beginnings'. This model directs managers to help organisations manage each transition (Campbell, 2008).

Recommendations for managing NHS development examine change at organisational, group and individual levels using a variety of different models, including organisational strategies such as 'Total Quality Management' and 'Business Process Re-engineering' (Iles & Sutherland, 2001). Some models of change management may be limited in their simplicity, especially in their application to complex and dynamic systems like the NHS. They also tend to focus on the process, rather than content of change. In efforts to overcome such limitations, an integrated 'organisational development' approach also exists (Buchanan & Huczynski, 2004; Iles & Sutherland, 2001).

1.7.2. Implementing New Technology and Innovation

Developments in technology and innovation are triggers for organizational change and development (Buchanan & Huczynski, 2004) and the use of CCBT is an example of this. Healthcare treatment innovations include technology-based interventions such as telephone health ('telehealth') and computer or internet interventions (sometimes termed 'eHealth') (Bee *et al.*, 2008). The process of implementing innovation is therefore another aspect of organisational change relevant to the present study involving CCBT.

A major influence on innovation research, including healthcare innovation, is Roger's diffusion of innovation model (Iles & Sutherland, 2001; Rogers, 2003). This proposes that diffusion occurs in an 'S' shaped curve, as innovation spreads slowly initially, accelerates as more people adopt it, then slows as a saturation point is reached. The model describes five categories of 'adopters', depending on the speed of those adopting the innovation: 'innovators', 'early adopters', 'early majority' 'late majority' and 'laggards'. Roger's also proposed five stages of adopting innovation: the acquisition of knowledge, attitudinal interest or persuasion, mental evaluation of innovation, trial and confirmation of the decision to implement. In addition, the model suggests that the extent to which innovation is adopted is associated with the perception of five key properties: its relative advantage, compatibility, complexity, trialability and the observability of results. An example of this model applied to psychological intervention innovation is the adoption of online psychotherapy, to try to understand slow uptake and ways potential barriers might be overcome (Lovejoy *et al.*, 2009).

A recent extensive systematic review was carried out on diffusion of innovation in healthcare organisations, using a wide range of studies including those from sociology, psychology, organisational and management (Greenhalgh *et al.* 2004). The conclusion was that this is a complex, multi-dimensional process. The researchers developed a conceptual model that considered factors such as the innovation itself, resources, system antecedents, readiness to change, adoption, the implementation process, consequences, socio-political context and communication. This demonstrates the variety of potential barriers and facilitators to implementation that may arise, and the need to consider both individual and systemic factors. It is therefore important to recognise that low referrals to the CCBT pilot may reflect processes involved in adopting innovation.

1.7.3 Implementing Change in Health Services

As discussed above, a variety of individual, social and organisational barriers can arise when change or innovation is introduced to organizations. These challenges are experienced within the complexities of the NHS and efforts are made to manage them (Iles & Sutherland, 2001). Examples of areas in which this can arise in health services include the implementation of evidence-based practice and clinical guidelines (Haynes & Haines, 1998; Steinfield *et al.*, 2009), changing primary care practice (Slade & Priebe, 2006) and the use of practice improvement methods, such as developing outcome measures (Barkham *et al.*, 1998; Barkham *et al.*, 2005; Cape & Barkham, 2002). Research into implementing evidence-based practice argues that this process is complex and requires not only evidence for clinical effectiveness, but also a receptive method and environment for delivery (Haynes & Haines, 1998). Haynes and Haines (1998) propose systemic barriers to implementing evidence-based practice that could include lack of training, presentation of guidelines, access to relevant equipment, and resources. Slade & Priebe (2006) propose that change in primary care, such as prescribing behaviour, involves several interacting variables including the quality and source of evidence, organizational issues, economics, the clinician, the clinician-patient relationship and the patient themselves.

Recent change management studies in healthcare settings include a qualitative study into the implementation of bedside handover by nurses, using Lewin's (1951) three stage

model (McMurray *et al.*, 2010). A variety of themes influencing successful handover were found, mainly concerning organisational factors and being mindful of clinicians' attitudes. Another recent study reported a successful process of implementing CBT in a mental health service, through an intensive training programme, and also highlighted the need to address individual, contextual and organisational factors (Steinfield *et al.*, 2009). Steinfield *et al*. (2009) commented on the need to consider staff attitudes, as well as the intensity of training and organizational support. Both studies recognise the multi-faceted nature of facilitating change in staff behaviour and the influence of both individual and systemic factors. Similarly, the implementation of the CCBT pilot required changes in staff referral behaviour and should consider the complexity of factors involved in this, both individually and as a group, within the demands of the organization of the NHS. On reflection, it could have been beneficial to have incorporated a more strategic model of implementation for the pilot of CCBT and allowed more time for this new intervention to embed itself within the system, as a process of social and organisational change

1.7.4 Summary

The social-psychology and organisational change literature shows that trying to change staff behaviour in an organisation as complex as the NHS, is likely to involve numerous social, organizational and individual factors, which could affect willingness or resistance to change. Attempts were therefore made in the present study to provide opportunities to gather not only individual, but also potential systemic influences on referral behaviour, through the items included in the survey. For example, clinicians were asked their profession (i.e. indicating their place within the mental health system and the type of mental health problems they are likely to work with) and also which were their preferred intervention options currently accessible to them. An analysis could be carried out on the process in which the CCBT pilot was actually implemented within the service, to identify possible reasons in this process for slow uptake; however that was beyond the scope of the current research. Nevertheless, attempts were made in the survey to elicit views on how clinicians thought CCBT could be implemented in future. This included asking who they thought should refer, where CCBT should be made available and whether they wished to receive training. Further description of the development of survey items is included in the Method section 2.4.1.

1.8 Summary of Research

There is sufficient evidence for the effectiveness of some CCBT packages for anxiety and depression for inclusion in NICE guidelines, but many trials involve highly selected samples and controlled studies (Kaltenthaler *et al*., 2006). CCBT implemented in uncontrolled clinical settings also appears to be effective for those that engage; however, studies are limited and problems with low uptake have been reported (Titov, 2007). It is also unclear how best to implement CCBT to optimise access due to the variation that exists among studies of delivering packages, for example in location or support provided (Marks *et al*., 2007).

CCBT studies have neglected to investigate the referral process in clinical settings from clinicians' perspectives and the impact this may have on uptake. The limited research on clinicians' views of CCBT indicate that negative attitudes towards CCBT exist, which may be influenced by variables such as therapeutic orientation and may impact on their use of CCBT (Mora *et al*., 2008; Whitfield & Williams, 2004). This is consistent with expectations from theories of reasoned action and planned behaviour, although the influencing variables are unclear (Hogg & Vaughan, 2011). Currently, there is also limited research on systemic and organisational factors involved in implementing CCBT specifically, to better understand the possible driving and restraining forces.

Research is needed on clinicians' views of implementing CCBT that investigates potential barriers to access (for example clinicians' attitudes towards the intervention itself and other clinician-related variables or systemic factors, such as preferences for other interventions). Information should be gathered from a range of potential referrers to CCBT, with opportunities to express their qualitative views of this intervention and suggest how it could be implemented.

1.9 Current Study Aims

This study arose in response to low referrals received during the implementation of a CCBT pilot. The overall aim is to learn more about possible barriers to accessing CCBT

and how this might be improved to increase access to psychological intervention. The objectives are to investigate clinicians' views and use of CCBT, in particular by examining both individual and systemic factors related to their likelihood to refer and reasons involved in the referral decision-making process. Another objective was to gather, from a mixed sample of professionals, their views on how CCBT might be implemented in order to optimise access. The research into barriers or facilitators of implementing CCBT, through changing staff behaviour, is therefore investigated within the context of both individual and social change.

1.10 Research Questions

1. What are participants' initial views of CCBT's benefits and concerns, probable uptake by patients and overall level of approval?

2. What clinician-related or systemic variables are predictive of self-reported likelihood to refer?

3. Using a framework thematic analysis, what appealing or concerning aspects of CCBT do participants describe, and what are the reasons why they may or may not refer to CCBT?

4. What are participants' views on how CCBT could be best implemented in order to optimise access?

2 METHOD

2.1 Design

The study used a mixed design involving both quantitative analysis and qualitative framework thematic analysis. A cross-sectional survey was carried out with participants using an online semi-structured questionnaire incorporating a mixture of question types, including demographic information, Likert-scale items, multiple choice and open-ended questions.

2.2 Ethical Considerations

Prior to the current study, the researcher had submitted and received ethical approval from the local NHS Fife and Tayside research ethics committee and NHS Fife research and development department for the CCBT pilot project, so ethical approval was submitted and received as an amendment to this in September 2010 (see Appendices 5 and 6 for approval letters for the current study). This included ethical approval of a participant information sheet (see Appendix 7), the design of which was informed by local NHS research and development guidelines. This explained to those being asked to participate the purpose of the research and that participation was voluntary. Ethical approval was also obtained for clinician interviews but these were not included in the study due to a higher than anticipated response rate to the survey.

Ethical issues included the consideration that clinicians may not wish to be identified and so participation was anonymous. In addition, any potentially sensitive information requested, such as demographic information, was kept to a minimum. To reduce burden on participants, the survey was kept as brief as possible and took approximately 5-10 minutes to complete, which participants were informed of beforehand. To further reduce participation time, the questionnaire was put into an online survey rather than posted out. Contact details of the researcher were included if there were any questions. No consent was obtained because the survey was anonymous, however the participant information sheet explained that completion of the survey indicated agreement to participate.

2.3 Sample

2.3.1 Inclusion and Exclusion Criteria

All Clinicians working with mental health problems in NHS Fife, particularly those in primary care, were identified as potential referrers to CCBT and therefore potential participants for the study. This involved those in the clinical psychology department, nurses and general practitioners (GPs). The primary focus was to seek participants working with adults, particularly those nursing and psychology clinicians involved in the CCBT pilot. The sample within the psychology department was widened to include those working in non-adult client groups. This was to help maximise response numbers in this sample group, although broadening the scope of the information gathered would mean acknowledging potential differences in views between client groups. Therefore, all clinicians working in the clinical psychology department in Fife, all GPs in Fife. and all community adult mental health nurses in Fife were targeted in the initial sample and are described below.

2.3.1.1 Clinical Psychology Department Sample

All clinicians in the clinical psychology department in Fife were identified as potential participants. The initial sample of all clinicians included those working in adult, learning disabilities, severe and enduring mental illness (SEMI), child and family, physical rehabilitation, older adults and health. This involved 51 clinical psychologists, two cognitive-behavioural therapists, nine clinical associates in applied psychology, three health psychologists, six specialist psychological practitioners, eight trainee clinical psychologists and two advice coordinators (guided self-help clinicians). Assistant psychologists were excluded due to the variability in their clinical knowledge and experience, most of whom were working in research projects and were unlikely to be potential referrers to computer-guided CBT.

Sufficient responses to the survey were received that enabled the study to focus on views from those working with adults. Responses from clinicians not working with adults were therefore excluded from the analysis (see Results chapter). This helped reduce potential

confounding variance in views between those working with different client groups. Therefore the sample was reduced to those who rated themselves as working with adults at least some of the time, which included those in older adult, health and SEMI. This sample involved 28 clinical psychologists (17 in adult, five in older adult, four in health, three in SEMI), two cognitive-behavioural therapists, five clinical associates in applied psychology, three health psychologists, six specialist psychological practitioners, eight trainee clinical psychologists and two advice coordinators. This gave a total sample of 54 clinicians in the clinical psychology department.

2.3.1.2 Nursing Sample

All community psychiatric nurses (CPNs) and mental health nurses (MHNs) in Fife working with an adult population were identified as potential participants and sent the survey as potential referrers to CCBT. Some had been given the opportunity to refer to the pilot project. Only one nurse had chosen to refer to the pilot project and therefore a concern was the level of interest from nurses and potentially low response rate. Therefore the nurses for whom it was most likely to be relevant were included, so only those working in adult teams were contacted. This involved a total sample of 23 adult community psychiatric nurses and five mental health nurse practitioners.

2.3.1.3 GP Sample

All GPs in Fife were identified as possible participants, since they were potential future referrers to CCBT, so were also sent the survey. The total number of GPs at the time was 249, working across 57 GP practices in Fife.

2.3.1.4 Total Sample

The total sample was 336, split into 54 in the clinical psychology department, 249 GPs and 28 nurses. Thirty-three responses were received from the clinical psychology department, 29 from GPs and six were from nurses (including one whose job title was ‘counsellor’, who was assumed to be from the nursing sample because no counsellors are employed in the clinical psychology department). This gave a response rate of 61 per

cent in clinical psychology, 12 per cent from GPs and 21 per cent from nurses. Four participants did not give their profession so the response rate among different professions was not accurate.

2.4 Survey Methods

The study sought the views and experiences of clinicians regarding the implementation of CCBT; however, no valid questionnaire existed that would provide the relevant information necessary for the research aims. It was therefore necessary to develop a questionnaire specifically for the purpose of this study (see Appendix 8 for the final version of the survey).

2.4.1 Development of Survey

The possible limitations of developing a survey were considered (see methodological considerations in Discussion chapter) and recommendations for developing health service questionnaires and surveys were used to try to reduce these (McColl *et al*., 2001; Burns *et al*., 2008; Slade & Priebe, 2006). The stages involved are outlined below:

- Generating items
    - Identification of key question areas relevant to the research questions and service development following the low uptake experienced during the pilot project. This includes gathering information relevant to potential individual and systemic barriers or facilitators to change.
- Shaping and formatting items and survey as a whole
    - Literature search for previous surveys or questionnaires involving views of clinicians on CCBT or other internet-based psychological interventions.
    - Search for departmental questionnaires and analogues.
- Piloting of survey
- Modifications leading to final version of survey.

This process included consultation with members of the clinical psychology department involved in the CCBT pilot project and a staff member from the University of Edinburgh clinical doctorate programme, Professor Dave Peck, who has experience of publishing studies on CCBT and its implementation. The stages in developing the survey are described in more detail below.

2.4.1.1 Generating Items

Items for the survey were developed using experience gained from the CCBT pilot project and knowledge of CCBT research (see Introduction chapter). Items targeted research questions on clinicians' views of CCBT, factors that may influence clinicians' likelihood to refer to CCBT and ways to improve access to CCBT. Although the survey was in response to CCBT implemented in one local area, it was hoped that information gathered from items might generalise to other clinical settings to inform the evidence-base for implementing CCBT. Questions therefore sought to elicit the following information:

- *Relevant participant demographic information.* These items aimed to investigate possible variables that might influence views of CCBT among clinicians and to provide information about the participants in the study. This included age, years of experience, profession and client group. This also provided information about clinicians' position within the healthcare system by determining whether they were a specialist or non specialist mental health clinician.
- *Knowledge and experience of CCBT.* This informed the study's understanding of the participants' levels of experience of CBT and to investigate whether this influenced views of CCBT or likelihood to refer.
- *Familiarity with computers.* This included an indication of both the level of use of computers and the preference for using them, as these may differ. Again this was to investigate the influence on views of CCBT or referrals.
- *Views of CBT.* This involved giving opportunities to express positive and negative views and reasons for these, which included opportunities to express

both individual and systemic reasons for these views, as potential barriers and facilitators of change.

- *Indication of likelihood to refer to CCBT.* This was to enable some distinction between views and likelihood to actually use CCBT, to investigate whether this differed and if variables influenced likelihood to refer.
- *Suggestions for how to implement CCBT.* This included opportunities for participants to provide practical suggestions, such as who should refer to CCBT or where it should be accessed, to consider the organizational factors involved.
- *Indication of interest in learning more about CCBT.* This involved seeking levels of interest in training.
- *Experiences of those that have actually been able to refer*. This involved creating an opportunity for participants to describe their perceptions of the referral process, or reasons for not referring to CCBT, to investigate factors (both individual and systemic) involved in this process. This included asking participants how patients had reacted to being offered CCBT.

2.4.1.2 Shaping and Formatting

The design of the survey was shaped and formatted through searches of the literature and previously used departmental questionnaires. This included designing response formats, wording questions and deciding on the number of questions whilst considering the need to minimise completion time.

2.4.1.2.1 Literature Search

To inform the design of the survey and improve validity, a literature search was carried out for studies using surveys or questionnaires to obtain views or experiences of clinicians on computer-guided CBT or other self-help interventions. No questionnaire studies were directly relevant to the present research questions, which highlighted the gap in the research. However, some studies (included in the Introduction chapter) were informative and are described below in reference to developing the questionnaire.

MacGregor *et al*. (2009) had investigated referrer satisfaction with a specific CCBT package (*Fearfighter* for anxiety), rather than views of CCBT, its implementation or the referral process. However, the structure of mixed Likert scales and open-ended questions indicated the usefulness of this design. Themes from patients' responses highlighted the need to try to distinguish between clinicians' and patients' views of the referral process but this would be challenging in a survey completed only by clinicians. In an attempt to investigate this within the constraints of a clinician survey, clinicians were asked *their reasons* for offering or not offering CCBT to patients and also *how they thought patients had responded* to being offered it.

In Whitfield and Williams' (2004) survey-based study of clinicians' views and use of CCBT, results highlighted the need for questions investigating clinician factors related to referral, notably asking their knowledge of computerised interventions, personal use of computers, beliefs about usefulness and concerns. From a choice of responses, the top three factors that were selected by clinicians that might encourage them to use CCBT more were: learning more about it, receiving training and being aware of suitable locations for use. Therefore opportunities for clinicians to express such factors were included. However, response options had been provided by the authors rather than generated by clinicians themselves, so it was important in the present study to include open-ended questions and investigate qualitative data expressed.

Studies of online interventions and attitudes by Wangberg *et al*. (2007) and Mora *et al*. (2008) also informed questions in the survey. Both had indicated that CBT orientated therapists were more positive than psychodynamic therapists toward online therapy, highlighting the need to investigate this as a predictive factor in referrals. Both studies asked opinions about online interventions without support, rather than computer-guided self-help (CCBT). However, some questions were considered relevant to the present study, particularly those on therapeutic orientation, attitudes and willingness to receive training and use the intervention in practice. Mora *et al*. (2008) also investigated demographic variables, including age and use of computers, which were included in the present study.

Selected items were taken from Mora *et al*. (2008) that asked attitudes towards potential benefits and concerns about online interventions using a 5-point Likert scale (see Appendix 9). The type of computerised intervention referred to in the present study is different because it refers to guided self-help rather than online therapy, however some items were still considered potentially relevant. The use of previously used quantitative items could improve the validity of the survey alongside qualitative information obtained from open-ended questions. Some questions used by Mora *et al*. (2008) were not included in the survey as they were considered ambiguous, especially when applied to views of CCBT. They also did not describe carrying out a pilot therefore the validity of their items is questionable. The items were located after the open-ended questions in the survey to prevent them influencing participants' qualitative responses.

2.4.1.2.2 Use of Departmental Questionnaires / Analogues

Pre-existing questionnaires used in the clinical psychology department in Fife to seek views or experiences of interventions were examined, however these were all designed for patients using services. No questionnaires or surveys had been used to assess clinician views on services or interventions. Patient satisfaction questionnaires gave an indication of how views had been elicited using a mixture of Likert-scale questions and open-ended questions. These demonstrated the need to keep questionnaires as brief as possible and clearly worded. Opportunities were given to voice both positive and negative opinions, as well as to provide comments on interventions or services that could influence how they could be improved in future. These aspects were relevant for the present survey on CCBT. A variety of 3-point, 5-point and 10-point Likert-scales were noted in different questionnaires. It was decided that the use of 7-point items for the Likert-scale questions would offer sufficient variation in responses whilst avoiding too large a scale, one that could cause problems with reliability for the subjective ratings between responders.

2.4.1.3 Pilot

The survey was piloted with five clinicians in the clinical psychology department in Fife. Two were clinical psychologists, one was a fourth year specialist psychological

practitioner, one a second year trainee clinical psychologist, and one a health psychologist. Each pilot participant was asked to go through the survey trying to answer each question and feedback was requested, for example on readability, relevance, length and generally how they felt about completing the survey (for example if there were any questions they felt uncomfortable answering).

2.4.1.4 Modifications Following Pilot

The final version of the survey was produced following feedback from the pilot, which highlighted the need for some minor alterations. The order of questions was altered so that more important questions were included earlier on, as it was pointed out that some clinicians may not finish completing it. For example, the questions asking how much clinicians approve of using CCBT and their interest in receiving training were moved to nearer the beginning. One question was reworded from asking if clinicians were *"willing to receive training…"* to *"would you be interested in receiving training…"* because this felt less negative for those wishing to respond 'no'. There was more distinction made when participants were asked what client group they worked with because the question was considered vague and did not allow for those working across specialties. More response choices were created when participants were asked if they had referred into CCBT to allow for answers that were "not applicable", for example if they had not heard of CCBT, therefore distinguishing those clinicians who were choosing not to refer.

2.5 Study Procedure

2.5.1 Online Survey

Different methods for distributing the survey were considered and the use of an online survey was explored. It was felt that an online format might encourage a greater response rate due to ease and convenience of use, for example by eliminating the need for participants to return the survey via post. It was also likely to reduce the administration time and costs for distributing the survey, especially considering the large target sample across Fife. In addition, an online survey would be a more environmentally-friendly option by reducing paper usage and waste. The research

governance officer for NHS Fife, within the research and development department, was contacted to check whether this method of distributing the survey would require an amendment to ethics and this was not considered necessary.

A number of different websites exist that enable users to construct surveys, administer them online and collect data from responses. Several of the most recognised websites were considered, along with examining a non-profit making online survey review website (http://www.idealware.org/articles/fgt_online_surveys.php). The different online survey options considered included www.zoomerang.com, www.surveygizmo.com and www.surveymonkey.com. In considering the various costs and survey tools options, as well as taking recommendations, www.surveymonkey.com was considered the most reliable and cost-efficient. An effort was also made to speak to colleagues within the Psychology Department in Fife who had experience using online surveys for research and this revealed that the website www.surveymonkey.com had been found to be useful for other projects.

2.5.1.2 Setting up Online Survey

An account was set up on www.surveymonkey.com and the survey inputted. This involved constructing question formats, for example whether responses were multiple choice, forced responses or open-ended. Then each question was inputted, together with response choices. Survey options included selecting a colour scheme, which was chosen a basic blue design to reflect the NHS colour scheme. There was an option to have a 'bar' at the top of the page to show the participant how much of the survey was left to complete and this was turned on in order to assist in completion of the survey. It was possible to eliminate follow-up questions for respondents if their previous responses indicated that these did not require completing i.e. for those who said that they had not considered offering CCBT to anyone then the questions requesting more information on these experiences did not appear. This ensured that only questions relevant to each respondent was presented, therefore making the survey more user-friendly.

The online survey itself began with just a brief introduction to the questions (due to the provision of a separate participant information sheet) and participants were thanked for their time at the end. Due to shared access to computers within the NHS, an option was activated so that participants were not able to re-enter the survey once they had started it and logged out, so that they could not enter another participant's incomplete survey on the same computer.

2.5.2 Distribution of Survey

In order to distribute the email containing the survey, the communications department of NHS Fife was contacted and agreed to cascade the survey email to their distribution list of all GP practices via their practice managers, who were asked in the email to forward it to their GPs. This ensured the survey reached the most up to date list of GP contacts. The researcher contacted the relevant sample of nurses across Fife using the NHS Fife directory in order to email the survey out to relevant clinicians. Most were contacted by telephone initially and followed up to ensure emails were received. The clinical psychology department email list was used to distribute the survey to the relevant clinical staff via the department secretary.

The survey was accessed through an online website address link included in a covering email (see Appendix 10 for an example of the covering email), together with the participant information sheet attached as a separate word document. Participants were briefly informed of the study in the covering email, directed to read the participant information sheet if interested and asked to access the survey by clicking on the website link in the email. Participants were not asked to complete a consent form because it was an anonymous survey, which was explained in both the covering email and the participant information sheet.The survey was open for just over 3 months, from the 22nd October 2010 until the 4th February 2011, during which a reminder was sent out after one month via email through the previously used distribution lists. It was then possible to download the data into an excel spreadsheet and collate open-ended questions, as well as download individual survey responses, for data analysis purposes.

2.6 Method of Data Analyses

2.6.1 Analysis of Quantitative Data

Quantitative data were analysed using SPSS (Statistical Package for the Social Sciences, version 18). Non-parametric analyses were used because Likert-scales are ordinal data, although they are sometimes less accurately considered interval data (Clark-Carter, 2004). Kendall's tau non-parametric correlations were used to investigate correlations between Likert-scale ratings. This is considered a more accurate non-parametric test than Spearman's as it more accurately estimates correlation in the general population, takes into account large numbers of tied ranks and is better with smaller samples (Field, 2009). Chi-squared tests were used to examine associations between categorical variables and Fisher's exact tests were used when expected frequencies were less than five (Field, 2009). The significance level of $p = .05$ was used, however when sections of analysis involved multiple tests, Bonferroni adjustments were made and these are indicated in the relevant sections in the Results chapter below. The adjustment involved dividing *p* values by the number of comparisons carried out in each section, to reduce the likelihood of a significant result occurring by chance (Field, 2009).

2.6.2 Analysis of Qualitative Data

Qualitative data from open-ended questions were analysed using framework thematic analysis. Thematic analysis is a qualitative method used *"for identifying, analysing and reporting patterns (themes) within data"* (Braun & Clarke, 2006, p. 79). Framework analysis shares many aspects of thematic analysis, developed as a flexible, systematic and more transparent method mainly used in applied policy research but also in healthcare (Srivastava & Thomson, 2009). It is a matrix-based analysis, in which data is continuously sorted into a framework of themes and sub-themes (Ritchie & Lewis, 2005).

The analysis was undertaken once all the data were collected, rather than during the collection process. Themes were identified using an inductive realist approach (i.e. generated from the data, without a theory driving the analysis). The researcher spent

time familiarising herself with the data, then data were categorised and analysed into themes in a process of continually moving back and forth across the data (see Appendix 13 for an example of the categorisation process). The five main stages involved in framework thematic analysis (Srivastava & Thomson, 2009) are shown below:

1. *Familiarisation:* getting to know the data and becoming aware of key concepts.
2. *Identifying a thematic framework:* identifying initial key concepts and themes.
3. *Indexing:* identifying portions or units of data corresponding to key themes.
4. *Charting:* sorting data into headings and subheadings associated with themes.
5. *Mapping and Interpretation:* analyzing and interpreting the framework of data.

Framework analysis allows for 'a priori' issues (prior knowledge or views of the data) but it is important to be open-minded and not force these to influence the analysis (Srivastava & Thomson, 2009). Therefore the researcher was aware of their views of CCBT and the literature and acknowledged some expectation of mixed opinions in the data (see limitations in Discussion). However, the researcher attempted to maintain an inductive approach throughout and took a reflexive stance whilst analysing the data, which is an important aspect of this analytic approach (Braun & Clarke, 2006).

3 RESULTS

3.1 Participant Information

A total of 85 surveys were submitted, although some participants did not complete all items. Thirteen respondents worked solely with non-adult client groups (such as child or learning disabilities) and these were excluded from the analysis to maintain the focus of the research on CCBT for adults. This gave a total sample of 72. Demographic information is shown in Table 2.

Table 2. Demographic information of participants

Participant Demographics (N=72)			No. of participants
Profession	Psychology	Clinical Psychologist	20
		Clinical Associate in Applied Psychology	1
		Health Psychologist	1
		Specialist Psychological Practitioner	1
		Trainee Clinical Psychologist	7
		Trainee Clinical Associate	1
		Advice Coordinator (Guided Self-Help Clinicians)	2
	Nursing	Community Psychiatric Nurse	2
		Senior Charge Nurse (AMH)	1
		Adult Mental Health Nurse	2
	GP		29
	Counsellor		1
	Not stated		4
Client group	Exclusively Adult (ages 16-64)		33
	Mixed (various client groups including adults aged 16-64)		38
	Not stated		1
Geographical area of work	Dunfermline & West Fife		29
	Kirkcaldy & Levenmouth		18
	Glenrothes		3
	North East Fife		9
	Across more than one area		11
	Not stated		4
Age	20-29		11
	30-39		21
	40-49		20
	50+		14
	Not stated		6
	Mean		40.35
	Standard Deviation		9.96
Years of clinical experience	0-4		18
	5-12		12
	13-24		21
	25+		15
	Not stated		6
	Mean		14.62
	Standard Deviation		10.53

As Table 2 shows, most participants worked in the clinical psychology department or were GPs. Approximately half of participants worked only with adults and half with a mixed client group (which included adults). Participants worked across different areas of Fife, with almost half in Dunfermline and West Fife (see map of Fife in Appendix 2, which shows the regions involved in the CCBT pilot). There was a reasonable spread of ages and years of clinical experience, with a mean age of 40.35 (ranging from 24 – 61) and mean years of clinical experience of 14.62 (ranging from 1 – 37).

Participants' experience of using CCBT is presented in Table 3, which shows that a third of respondents were involved in the CCBT pilot project and only two of these had not referred to CCBT. Half of respondents had referred to CCBT and one third of these referrals were outwith the pilot project. There were 20 who were unable to refer to CCBT because they either had not heard of it or did not know how to refer and eight did not think it was suitable for their client group. This indicates that of the 72 respondents, 44 were able to refer to CCBT, 35 had referred and nine had not.

Table 3. CCBT experience of participants.

CCBT experience (N=72)		**No. of participants**
Involved in CCBT pilot?	Yes	24
	No	46
	Not stated	2
Referrals of those involved in CCBT pilot (n=24)	Referred to CCBT	22
	Did not refer to CCBT	2
Those who have referred to CCBT (n=35)	Within CCBT pilot	22
	Outwith CCBT pilot	13
Those aware that CCBT exists but unsure how to refer into it		12
Those unaware that CCBT exists		8
Those who do not think their clients are suitable for CCBT		8

3.2 Research Question 1

What are participants' initial views of CCBT's benefits and concerns, probable uptake by patients, and their overall level of approval?

Research question one is examined in the four sections below, using mostly descriptive statistics:

- First impressions of CCBT categorised as positive, negative or mixed.
- Self-report Likert-scales rating potential benefits and concerns of CCBT.
- Self-report Likert-scales rating level of approval towards CCBT.
- Self-report Likert-scales rating perceived uptake of CCBT by patients.

3.2.1 First impressions of CCBT.

From the total sample of 72, 69 completed the open-ended item *"When you first heard about the possibility of offering computer-guided CBT to patients, what did you think?"* Two responses were excluded because one stated their job title and the other that *"this was the first they had heard of it"*.

Responses (n = 67) were categorised as negative, positive or mixed. Examples of how responses were rated are shown below.

"a great idea to shorten waiting times for patients to access CBT" (positive)

"I was unsure, due to areas like confidentiality and risk." (negative)

"a useful addition to existing methods of psychological intervention, but rigorous evaluation of outcome remains essential" (mixed).

As seen in Table 4, more than twice as many positive responses (35) were given than negative (14), while 18 were mixed, indicating that nearly half of the sample (32 out of 67, 48 per cent) had some negative impression of CCBT. Of the two main professional groups, GPs gave a larger proportion of positive first impressions (18 out of 26, 69 per cent) compared to clinical psychologists (seven out of 20, 35 per cent). Clinical psychologists were more mixed (nine out of 20, 45 per cent) than GPs (five out of 26, 19 per cent). However a Freeman-Halton extension of the Fishers exact test (Vassar) showed that there was no significant association between GPs and clinical psychologists among the three response categories (pA = .0753 and pB = .0753).

Table 4. First impressions of CCBT: positive, negative or mixed.

Job Title	First impression of CCBT (n=67)		
	Positive	Negative	Mixed: positive & negative
Clinical Psychologist	7	4	9
Health Psychologist	1	0	0
Specialist Psychological Practitioner	0	1	0
Trainee Clinical Psychologist	2	2	2
Clinical Associate in Applied Psychology	1	0	0
Trainee Clinical Associate in Applied Psychology	0	0	1
Guided Self-help clinician (psych. dept.)	2	0	0
Counsellor	1	0	0
Nurse	3	2	0
GP	18	3	5
Profession not stated	0	2	1
Total	35	14	18

3.2.2 Ratings of potential benefits and concerns of CCBT.

Participants rated how strongly they agreed or disagreed with a list of potential benefits and concerns about CCBT and results are shown in Table 5.

Table 5. Ratings of potential benefits and concerns of CCBT on a 5 point Likert-scale

Potential benefits of CCBT	*N*	*Frequency of responses to Likert-scale ratings (% of n)*					*Mode*	*Mean*	*St. Dev.*
		1 Strongly agree	*2 Agree*	*3 Neither*	*4 Disagree*	*5 Strongly disagree*			
More open and expressive than F2F	65	0	12 (18.5)	20 (30.8)	25 (38.5)	8 (12.3)	4	3.45	0.94
Helps people with disabilities that make it difficult to attend F2F	64	10 (15.6)	42 (65.6)	8 (12.5)	3 (4.7)	1 (1.6)	2	2.11	0.78
Helps people in rural areas who have difficulty accessing F2F	65	18 (27.7)	41 (63.1)	3 (4.6)	3 (4.6)	0	2	1.86	0.70
Helps people with busy schedules who have difficulty attending F2F appointments	65	15 (23.1)	40 (61.5)	6 (9.2)	4 (6.2)	0	2	1.98	0.76
Provides services to a broader population of people in need	65	14 (21.5)	41 (63.1)	6 (9.2)	3 (4.6)	1 (1.5)	2	2.02	0.80
Helps people to avoid the stigma of seeing a therapist	65	12 (18.5)	38 (58.5)	13 (20.0)	2 (3.1)	0	2	2.08	0.72
Provides therapists with greater flexibility in their scheduling	64	9 (14.1)	36 (56.3)	13 (20.3)	6 (9.4)	0	2	2.25	0.82
Helps increase therapists caseloads of people who would not seek F2F	64	2 (3.1)	23 (35.9)	27 (42.2)	11 (17.2)	1 (1.6)	3	2.78	0.83
Allows therapists to better monitor patients in potential danger	64	0	7 (10.9)	32 (50.0)	21 (32.8)	4 (6.3)	3	3.34	0.76
Total benefits	581	80 (13.8)	280 (48.2)	128 (22.0)	78 (13.4)	15 (2.6)	2	2.43	0.79
Potential concerns of CCBT									
The expense involved	64	2 (3.1)	6 (9.4)	32 (50.0)	21 (32.8)	3 (4.7)	3	3.27	0.82
Trying to ensure confidentiality	64	1 (1.6)	27 (42.2)	21 (32.8)	15 (23.4)	0	2	2.78	0.83
The ability to provide emergency services to patients	65	5 (7.7)	28 (43.1)	19 (29.2)	13 (20.0)	0	2	2.62	0.90
Trying to establish a strong working alliance	65	12 (18.5)	28 (43.1)	18 (27.7)	7 (10.8)	0	2	2.31	0.90
Technological glitches and failure	64	7 (10.9)	37 (57.8)	9 (14.1)	11 (17.2)	0	2	2.38	0.90
Lack of legal guidelines	65	1 (1.5)	19 (29.2)	41 (63.1)	4 (6.2)	0	3	2.74	0.59
Total concerns	387	28 (7.2)	145 (37.5)	140 (36.2)	71 (18.3)	3 (0.8)	2	2.68	0.82

Table 5 shows modal responses of 'agree' for most items, including total benefits and concerns. One mode of 'disagree' was with *"CCBT is more open and expressive than face-to-face"*. Means are not advised for ordinal data but were included to permit

comparison with analyses carried out by those who devised the items (Mora *et al*., 2008). The strongest mean benefit was access for those in rural areas (1.86) and those with busy schedules (1.98). The strongest concerns involved establishing a working alliance (2.31) and technological problems (1.38). The overall mean for all benefits was 2.43 ('agree') and concerns, 2.68 ('neither agree nor disagree').

As Table 6 shows, a Mann-Whitney test indicated that there was no difference between GPs' and clinical psychologists' ratings of overall benefits (U = 2220.5, p = .624) or concerns (U = 185.0, p = .167).

Table 6. Comparison of GPs and Clinical Psychologists overall benefits and concerns.

Rating	Professional group	N	Median	Range (IQ)	Mann-Whitney
Benefits (9 items)	Clinical Psychologist	19	2	2 (0)	2220.5 (p = .624)
	GP	25	2	3 (0)	
Concerns (7 items)	Clinical Psychologist	19	2.5	3 (0)	182.0 (p = .167)
	GP	25	3	3 (1)	

3.2.3 Levels of approval of CCBT.

Participants' rated their level of approval of CCBT and Figure 1 shows that there was a positively skewed pattern of responses, with 59 out of 72 participants (82 per cent) approving of CCBT to some extent. Of the nine participants that disapproved (including one that slightly disapproved), responses seemed evenly spread among professional groups, with two psychologists (specialist psychological practitioner and trainee clinical psychologist), one nurse (CPN) and three GPs. Three did not state their profession. Of those with no opinion, two were GPs and two were psychologists (clinical psychologist and trainee clinical psychologist).

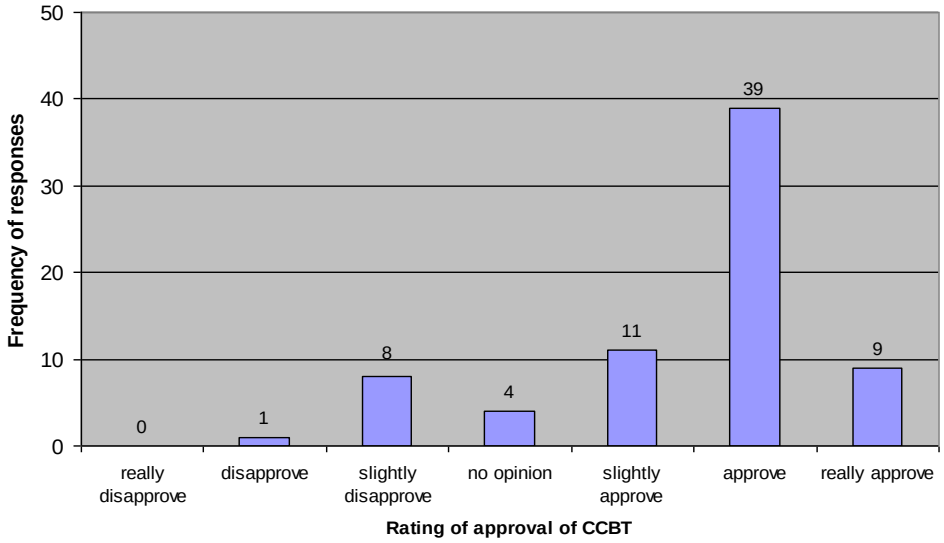

Figure 1. Bar chart showing participants' levels of approval of CCBT on a 7-point Likert scale (N=72)

Approval was split into two groups, one being less approval (rating 1-5) and the other, more approval (rating 6-7). When GPs and clinical psychologists were compared, as shown in Table 7, no significant association was found (p = .738, Fisher's exact test).

Table 7. Comparing GPs and Clinical Psychologists approval of CCBT.

Approval	Clinical Psychologist	GP	Total
Less Approval	4	8	12
More approval	16	21	37
Total	20	29	49

3.2.4 Perceived patient uptake of CCBT

Ratings of perceived patient uptake, shown in Figure 2, seem close to a normal pattern of responses. The modal response, from 30 participants (43 per cent), was the midpoint of 'sometimes'. There were slightly more responses in lower ratings of 1-3 (22 out of 69, 32 per cent) than higher ratings of 5-7 (17 out of 69, 25 per cent) but this difference was minimal. There was a significant positive correlation between participants' perceived patient uptake of CCBT and their approval of CCBT (tau = 0.465, N = 69, p < .001).

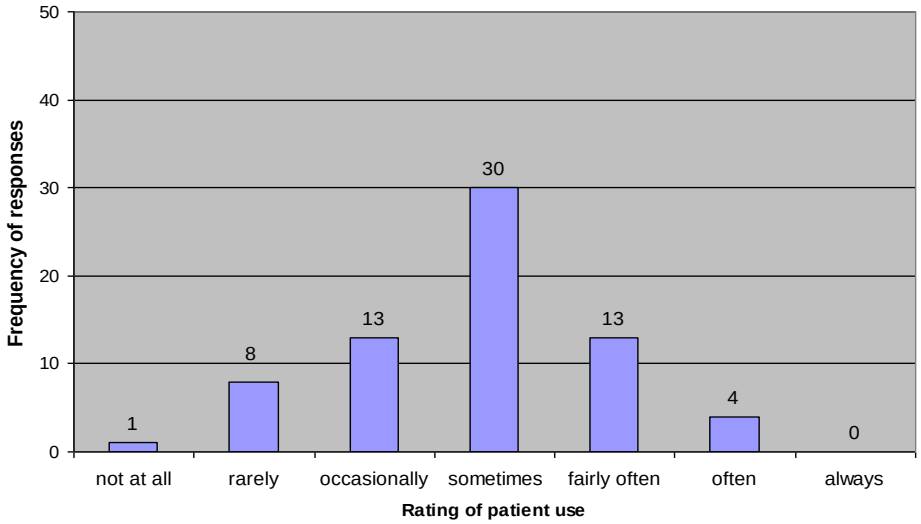

Figure 2. Bar chart showing how often participants think patients would agree to using CCBT, if appropriate for their problems, on a 7-point Likert scale rating (N=69).

3.2.5 Summary of Research Question 1.

What are participants' views of CCBT?

With regard to ratings of first impressions, benefits and concerns, approval and perceived uptake, there were mixed views of CCBT, as would be expected. Participants disagreed with the statement that CCBT was more open and expressive than individual therapy and neither agreed nor disagreed that it allows therapists to better monitor patients in potential danger. There was general agreement with all other statements of potential benefits, mostly referring to increased access to patients, especially for those in rural areas and with busy schedules. A degree of agreement existed for all statements about potential concerns except for the cost, with greatest concern about working alliance and technological problems. Few actually disapproved of CCBT and level of approval was associated with perceived uptake. Most participants rated the midpoint 'sometimes' for perceived uptake. Clinical psychologists seemed less positive in their views than GPs but these differences were not found to be significant.

3.3 Research Question 2

What clinician-related or systemic variables are predictive of self-reported likelihood to refer?

Research question two was examined in five sections, using the dependent variable of participants' ratings of likelihood to refer to CCBT (see Figure 3). Correlations and chi-squared analyses were carried out to examine associations with independent variables in each section. Bonferroni adjustments to *p* values are indicated below for each section when multiple tests were carried out.

- Likert-scale (7-point) self-report ratings of approval of CCBT, probable uptake, knowledge/experience of CCBT, confidence in referring to CCBT, liking of computers, use of computers (Bonferroni adjusted $p = .008$)
- Age and length of clinical experience (Bonferroni adjusted $p = .025$)
- Professional groups of mental health clinicians and specialism (Bonferroni adjusted $p = .025$)
- Preferred therapeutic orientation, including and excluding GPs (Bonferroni adjusted $p = .025$)
- Preferred low intensity intervention ($p = .05$)

Participants' ratings on 7-point Likert-scales for how much they like computers, use computers, their knowledge/experience of CCBT and their confidence in referring to CCBT are shown in Appendix 11 and Appendix 12. Ratings of likelihood to refer were in response to the question: *"If appropriate for their problems, how often do you think you would refer to CCBT?"* The modal response was 'fairly often' from 27 participants (38 per cent), with just six participants (8 per cent) rating more frequently than this and 39 (54 per cent) rating less frequently. There was no association between likelihood to refer and whether participants were in the CCBT pilot or not, χ^2 (1, N=70) = 0.120, $p = .729$ so participants were examined as one group.

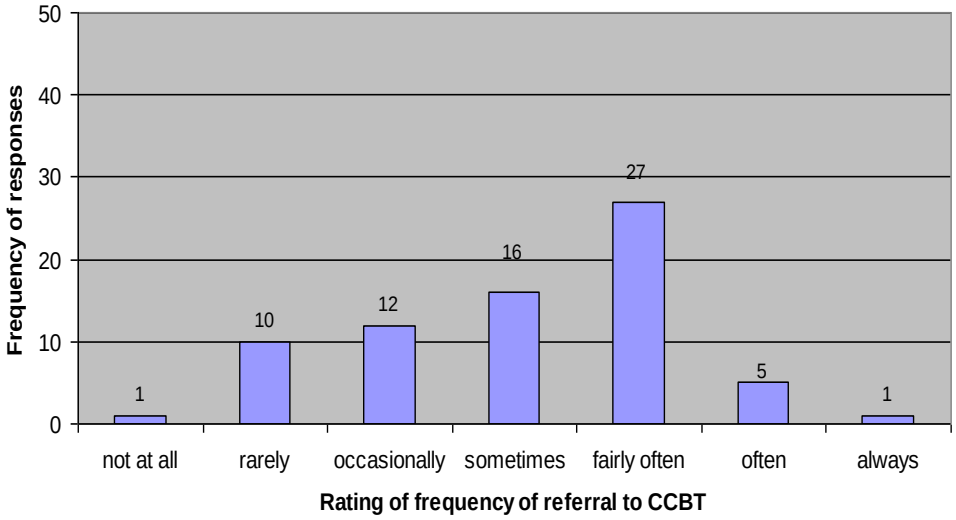

Figure 3. Bar chart showing how often participants would refer to CCBT, if appropriate for their patients' problems, on a 7-point Likert scale (N=72).

3.3.1 Self-report variables of approval of CCBT, probable uptake, knowledge/ experience of CCBT, confidence in referring and familiarity with computers.

Approval of CCBT

There was a significant correlation between participants' likelihood to refer to CCBT and their level of approval of CCBT (tau b = 0.360, N = 72, $p < .0005$). As was found in research question one, there was also a significant association between approval of CCBT and perceived uptake by patients (see p.59).

Probable uptake of CCBT

There was a significant correlation between participants' likelihood to refer to CCBT and their perception of patient uptake of CCBT (tau b = 0.480, N = 69, $p < .0005$).

Knowledge/experience of CCBT

There was no significant correlation between participants' likelihood to refer to CCBT and their knowledge/experience of CCBT (tau b = .046, N = 72, p = .632).

Confidence in referring to CCBT

There was a significant correlation between participants' confidence in deciding suitable referrals to CCBT and their knowledge/experience of CCBT (tau b = 0.455, N = 72, p < .0005). However there was no significant correlation between participants' confidence in referring and their actual likelihood to refer (tau b = .093, N = 72, p = .332).

Familiarity with computers

There was no significant correlation between participants' likelihood to refer to CCBT and how much they use computers (tau b = .08, N = 72, p = .389) or how much they like computers (tau b = .070, N = 72, p = .486).

Summary

Participants' likelihood to refer was significantly positively correlated with self-report ratings of participants' views of CCBT in terms of level of approval and perceived uptake by patients. There were no significant correlations between likelihood to refer and use of computers, liking of computers and knowledge/experience of CCBT. Confidence in referring to CCBT was associated with knowledge/experience of CCBT. However, confidence in referring to CCBT was not significantly correlated with likelihood to refer.

3.3.2 Age and length of clinical experience.

There were no significant correlations between participants' likelihood to refer to CCBT and their age (tau b = .035, N = 66, p = .708) or length of clinical experience (tau b = .003, N = 66, p = .977).

3.3.3 Professional group.

Job titles and likelihood to refer ratings are shown in Table 8. The modal response from clinicians was 'fairly often'. For the two main professions, the mode for GP's was 'fairly often' whereas for clinical psychologists it was 'sometimes'. There appeared to be differences even among the psychology staff, for example the clinical associate and both self-help clinicians rated that they would refer 'fairly often', whereas the specialist psychological practitioner and health psychologist rated 'rarely'.

Table 8. Job titles and ratings of likelihood to refer to CCBT.

Profession	**Frequency of Likert-scale rating of likelihood to refer to CCBT**							**Modal response**
	1 Not at all	**2 Rarely**	**3 Occasionally**	**4 Sometimes**	**5 Fairly Often**	**6 Often**	**7 Always**	
Clinical Psychologist	0	4	2	7	4	3	0	**4**
Health Psychologist	0	0	1	0	0	0	0	**3**
Specialist Psychological Practitioner	0	1	0	0	0	0	0	**2**
Trainee Clinical Psychologist	0	1	2	1	3	0	0	**5**
Clinical Associate in Applied Psychology	0	0	0	0	1	0	0	**5**
Trainee Clinical Associate in Applied Psychology	0	0	0	1	0	0	0	**4**
Guided Self-Help Clinician	0	0	0	0	2	0	0	**5**
Counsellor	0	0	0	0	1	0	0	**5**
Nurse: CPN, Senior Charge Nurse	0	2	1	0	0	0	0	**2**
Adult Mental Health Nurse	0	0	0	1	1	0	0	**4/5**
GP	0	1	5	6	14	2	1	**5**
Total (n=68)	**0**	**8**	**11**	**16**	**26**	**5**	**1**	

Likelihood to refer responses were categorised into two groups for the purposes of chi-squared analyses with professional groups. High referrers were those rating 5, 6 or 7: 'fairly often' 'often' and 'always' (n = 33) and low referrers were those rating 1, 2, 3 or 4: 'not at all', 'rarely', 'occasionally' and 'sometimes' (n = 39).

GPs and Clinical Psychologists

Although more GPs were in the high referrers group (see Table 9), there was no significant association between likelihood to refer and whether participants were GPs or clinical psychologists: χ^2 (1) = 2.643, p = .104.

Table 9. GPs and Clinical Psychologists' likelihood to refer.

Likelihood to refer category	Clinical Psychologists	GPs	Total
Low referrers	13	12	25
High referrers	7	17	34
Total	20	29	49

Opportunity to see mild to moderate mental health problems

Due to smaller numbers of a variety of job titles, clinicians were categorised into two groups for their opportunity to direct to low-intensity interventions. One was more likely to see severe cases (high intensity) and the other, more mild to moderate cases (low intensity). The high intensity group included clinical and health psychologists, specialist psychological practitioner, CPN and senior charge nurse. Low intensity included GPs, self-help clinicians, counsellor, adult mental health nurses, a clinical associate in applied psychology and trainee clinical associate in applied psychology. Trainee clinical psychologists were excluded because it was hard to assign a group reliably, as cases are likely to be less complex before becoming specialist trainees but placement experiences vary.

Table 10 shows that of the high referrers (n= 29), only seven (24 per cent) were high intensity specialists whereas 22 (76 per cent) were low intensity specialists. The relationship between participants' opportunity to see mild to moderate mental health problems and likelihood to refer to CCBT was significant: χ^2 (1) = 6.486, p = .011.

Table 10. Mental Health Specialty and likelihood to refer to CCBT.

Likelihood to refer category	High Intensity Specialist	Low Intensity Specialist	Total
Low referrers	18	14	32
High referrers	7	22	29
Total	25	36	61

3.3.4 Preferred therapeutic orientation.

All clinicians

Participants were asked to describe their preferred therapeutic orientation, if they had one, and 38 out of 72 participants responded. Only four participants excluded CBT from their response and just two of these stated psychodynamic or psychotherapy so it was not possible to compare CBT with psychodynamic or psychotherapy. Instead, groups were split into strictly CBT-based versus eclectic (other approaches with or without reference to CBT). Descriptions of preferred therapeutic orientation and category groups are shown in Appendix 13. The eclectic group predominantly involved more relationship-based approaches (e.g. IPT, CAT). Theoretically, they might prefer an individualised approach with more consideration of relationships and therefore might be less likely to refer to CCBT. However, there was no significant relationship between preferred therapeutic orientation and likelihood to refer to CCBT. : χ^2 (1) = 0.585, p = .444 (see Table 11 below).

Table 11. Preferred therapeutic orientation and likelihood to refer (all clincians).

Likelihood to refer category	Solely CBT-based	Eclectic	Total
Low referrers	11	11	22
High referrers	10	6	16
Total	21	17	38

Mental health clincians only

A further analysis excluded GPs due to uncertainty about specialised training in therapeutic interventions (see Table 12). No significant association was found (p = 1.000, Fisher's exact test).

Table 12. Preferred therapeutic orientation and likelihood to refer (mental health clincians only).

Likelihood to refer category	Solely CBT-based	Eclectic	Total
Low referrers	8	10	18
High referrers	4	6	10
Total	12	16	28

3.3.5 Preferred choice of low-intensity intervention.

From the total sample of 72, 70 participants were asked to select a preferred low intensity intervention from options currently offered within the clinical psychology department. They also had the option of selecting medication. Two participants were excluded, one for stating that none were appropriate for their client group except medication and this would not be their first choice, and another because they said they would offer either books or CCBT depending on the person.

As shown in Figure 4, 64 respondents (91 per cent) chose one of three options. The modal response from 32 respondents (46 per cent) was brief guided self-help, 19 (27 per cent) chose a stress course and CCBT was chosen by 13 (19 per cent). Three respondents (3 per cent) generated other suggestions. These were the Fife Clinical Psychology website (www.moodcafe.com), which contains downloadable self-help material, a smaller more interactive stress group and a nurse-led anxiety management group. Of the 13 who chose CCBT, seven were GPs and five were psychologists (four clinical psychologists, one trainee clinical psychologist).

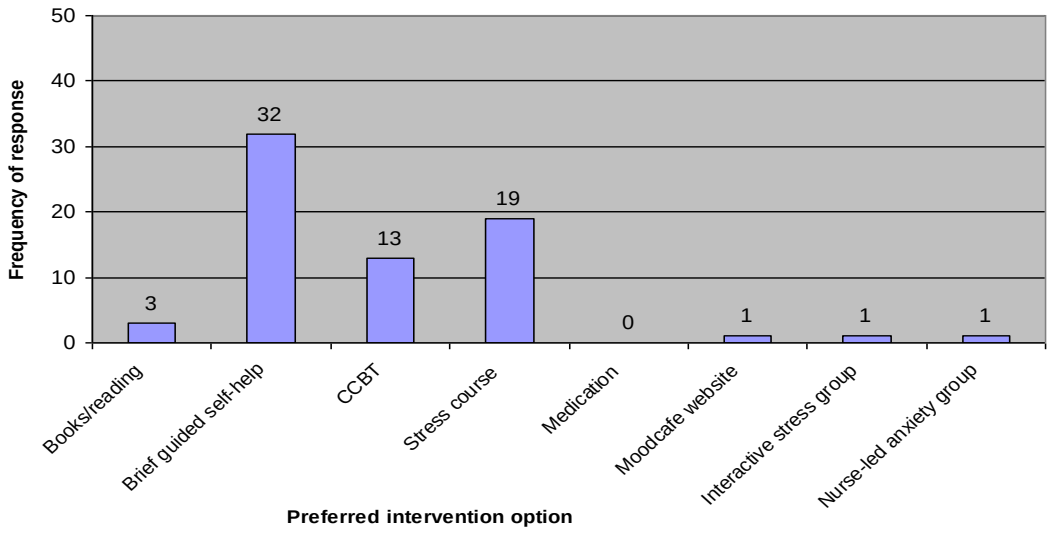

Figure 4. Bar chart showing participants' preferred choice of low-intensity intervention for mild to moderate anxiety and depression (N=70).

Responses were categorised into those preferring CCBT (n=13) and those not preferring CCBT (n=57) to look at associations with 'high' and 'low' referrers (see Table 13). No significant relationship was found: χ^2 (1) = 3.126, p = .077.

Table 13. Preferred low-intensity intervention and likelihood to refer to CCBT.

Likelihood to refer category	CCBT	Not CCBT	Total
Low referrers	4	33	37
High referrers	9	24	33
Total	13	57	70

3.3.6 Summary of Research Question 2.

What clinician-related or systemic variables are predictive of self-reported likelihood to refer?

Likelihood to refer to CCBT was associated with opportunity for contact with mild to moderate mental health problems. Likelihood to refer also correlated with approval of

CCBT and perceived patient uptake, implying that subjective views influence likelihood to refer, which is investigated further in research question three. A high proportion of participants preferred other low-intensity interventions over CCBT but there was no significant association between preferred intervention and likelihood to refer to CCBT. Nineteen per cent chose CCBT as their preferred option, which implies some degree of support does exist. There were no significant associations between likelihood to refer and age, length of clinical experience, familiarity with computers, knowledge/experience of CCBT or confidence in referring to CCBT. No significant association was found with preferred therapeutic orientation, using category groups of CBT and eclectic approaches.

3.4 Research Question 3

Using a framework thematic analysis, what appealing or concerning aspects of CCBT do participants describe, and what are the reasons why they may or may not refer to CCBT?

Research question three involved three sections:

- What do participants find appealing about CCBT and what are their reservations?
- What reasons do participants give for decisions to offer or not offer CCBT?
- How do participants describe patients' responses to being offered CCBT?

Examples of how responses were categorised into themes (described in section 6.2.6 of Method) are shown in Appendix 14. Themes and subthemes are presented in tables, with examples of responses chosen to best reflect the themes and subthemes found.

3.4.1 Appealing and concerning aspects of CCBT described by participants.

From the total sample of 72, 65 responded to the question *"What appeals to you, if anything, about offering this type of intervention?"* and 68 responded to *"What would be your reservations, if any, about referring people to CCBT?"*

3.4.1.1 Positive expressions of CCBT

There were six main themes for positive aspects of CCBT, as shown in Table 14.

Table 14. Themes and subthemes of positive aspects of CCBT expressed.

Themes	Subthemes (if present)	Examples
Accessibility	**Convenient**	*"...it can be done at a time convenient to the patient fitting around work etc."*
	Format	*"...particularly appealing to new generation of folks used to this type of communication"*
	Overcomes barriers to appointments	*"Useful for people who live remotely, people who do not wish to attend sessions with a psychologist due to stigma and individuals with agoraphobia"*
Perceived effectiveness	**Intervention effective**	*"Enables people to develop an increased understanding of their difficulties / CBT"*
	Self-help approach	*"It allows the person an element of independence and control over what is happening to them"*
	Format	*"Sometimes people are more honest with "machines" than humans as they often try to work out what we are thinking"*
Useful adjunct to therapy		*"I think it can be offered as a useful adjunct to therapy (not necessarily as a sole option)"*
Less waiting	**Less waiting time**	*"...they are getting some help quickly"*
	Waiting list initiative	*"Could be offered to people while on a waiting list after assessment"*
Efficiency of resources	**Cost-effective**	*"It's a cost effective way of offering treatment to patients with mild-moderate mental illness"*
	Less clinician time	*"...low intensity in terms of clinician time"*
	Service efficiency	*"It is an efficient way of offering individuals a service"*
Increases options in stepped care		*"Give patients increased choice if offered as one of a range of suitable options"*

The theme of ‘Accessibility’ of CCBT was expressed, which involved three subthemes. One subtheme referred to the convenience of CCBT, with descriptions of being able to use it at flexible times, out of working hours and at home. Another subtheme referred to how the format could make it more accessible, particularly for those who like technology. Participants also described CCBT as more accessible to those who would struggle to attend appointments, including those who live remotely or are agoraphobic.

‘Perceived effectiveness’ involved subthemes referring to the general effectiveness of the intervention (for example increasing skills), the self-help approach (for example, empowering and increasing control for patients) and the computer format (for example, being easier to interact with). Another theme was that CCBT was a ‘Useful adjunct to therapy’, so that patients could use it while having individual input. The theme of ‘Less waiting’ involved subthemes of patients having less time to wait and the notion that it could be used for patients on waiting lists. ‘Efficiency of resources’ involved subthemes that referred to saving money, clinician time and improving general service efficiency. The final theme expressed was that CCBT provided ‘Increased options in stepped care’, mainly by providing a greater choice of interventions for clinicians to offer patients.

3.4.1.2 Negative expressions of CCBT

Six main negative themes about CCBT were expressed by participants (shown in Table 15). One theme was ‘Accessibility’, which involved three subthemes, referring to patients either not owning a computer, not being able to use the computer programme (perhaps being unable to use computers or poor literacy) or problems with accessing a computer at a community location (such as a library). Concerns about library locations involved privacy issues and restricted opening times. A ‘Perceived effectiveness’ theme was also raised, with subthemes that involved a lack of belief in the effectiveness of the intervention itself, perceptions that it is not as effective as other interventions offered, criticism that it is not tailored to the individual and the lack of human contact. A theme involving ‘Patient motivation’ was also expressed, with some participants concerned that CCBT requires a degree of effort that some patients would struggle with.

Table 15. Themes and subthemes of negative aspects of CCBT expressed.

Themes	Subthemes (if present)	Examples
Accessibility	**Ability to access CCBT**	*"…more people than I expected reported having no computer"*
	Able to use computer	*"May be unsuitable for people with limited computer skills or poor literacy"*
	Access to location (library)	*"…not feeling comfortable using a public library computer, or working during library open times"*
Perceived effectiveness	**Intervention not effective**	*"CCBT only addresses symptoms (depression/anxiety) not the underlying cause (emotional neglect/abuse etc)."*
	Less effective than other interventions	*"I would also be concerned that it would not be as effective as other forms of therapy for people with interpersonal difficulties".*
	Not individualized	*"CCBT may not be tailored to the individual"*
	Lack of human contact	*"Lack of therapeutic relationship"*
Patient motivation		*"People need to be organised and self motivated - unsuitable if chaotic lifestyle"*
Delivery	**Assessing risk**	*"…risk, etc. has been assessed appropriately"*
	Monitoring	*"If condition worse than mild, (or if deteriorates), may not be detected"*
	Administration	*"How it would be administered."*
Suitable referrals	**Restricted suitability**	*"Most people we see are too complex "*
	Assessing suitable referrals	*"…that i may refer the wrong type of person"*
Perceived reception by patient	**Impersonal**	*"May seem impersonal- not that interested in them or their problems"*
	Dismissive	*"Patients may feel fobbed off by being offered this"*
	Prefer to speak to someone	*"They may want to see a person"*

Concern about the 'Delivery' of CCBT was also raised, which involved concerns about how the service would be set up and monitored. Three subthemes were expressed about how patient risk might be assessed, how progress would be monitored or followed up and how CCBT would be administered. Concern was also expressed about 'Suitable Referrals', both due to restrictions for those with more severe or complex problems and how suitability would be assessed. 'Perceived reception by patient' was a theme involving the belief that CCBT was not acceptable to patients, either because they would feel it was impersonal, feel 'fobbed off' or would want to speak to someone.

As reported above, mixed views of CCBT were evident in expressions of 'Perceived effectiveness' and 'Perceived reception by patients'. Further examples are given below.

> *"I believe that much of what we do in therapy requires a person feeling heard and understood, ie. is about human interaction and an individualised approach as much as CBT and other techniques."*

> *"It does not address relational and social issues that most people referred to psychology have and that can be addressed within the therapeutic relationship."*

> *"Could be quite impersonal and may in some cases reinforce emotional avoidance of discussing particular issues face-to-face. This may lead to a neglect of relationships and relating, which for some clients is already an issue. May maintain a sense of isolation in some cases with little or no opportunity for sharing problems/normalising with others."*

3.4.1.3 Reflections on positive and negative themes

The expressions above show underlying beliefs about what makes a psychological intervention effective; and the perception that human contact is critical, both in terms of

patients feeling listened to and by tackling problems using the therapeutic relationship. It also shows beliefs exist that CCBT may be detrimental to patients and maintain problems. The responses below show beliefs that patients want to speak to someone and that being offered something like CCBT will make them feel unimportant or dismissed.

> *"A lot of patients want to deal with another human."*

> *"...people are offered something that reinforces their beliefs- that they are not worthy of people's attention."*

> *"That they may feel they are being palmed off."*

However, expressions about effectiveness and patient responses were also positive, as shown below.

> *"...some pts struggle with forming and maintaining a therapeutic relationship – cCBT likely to be preferable to direct delivery of rx for some."*

> *"It allows the person an element of independence and control over what is happening to them."*

> *"Sometimes people are more honest with "machines" than humans as they often try to work out what we are thinking about their responses."*

These more positive expressions of CCBT show beliefs exist that the non face-to-face format of CCBT may also be preferable to some patients. In one instance, describing how it may be easier to access if someone had relationship difficulties that were a barrier to individual therapy. Also, it could be beneficial by empowering patients to work on their problems by themselves or they may be able to express themselves more easily.

3.4.2 Reasons given by participants for why they may or may not offer CCBT

From the total sample of 72, 44 were able to refer to CCBT and 35 had actually referred (see participant information). There were 31 responses to the question: "*If you have chosen **not** to offer CCBT during a session, please briefly give reasons why this would be"* and 17 responses to: *If you **have** chosen to offer CCBT during a session, please briefly give reasons why this felt appropriate"*. Themes are shown in Tables 16 and 17.

3.4.2.1 Reasons for choosing to offer CCBT

There were six themes of reasons for offering CCBT, as seen in Table 16. One was 'Access' to CCBT, with subthemes involving consideration of whether patients were capable of using computers (for example literacy ability), whether they had a computer or if they were able to access the library location at the times offered. Another theme was 'Perceived effectiveness', with subthemes that referred to general anticipated benefits of the intervention or benefits of using it after therapy ended to maintain progress. Another theme was considering 'Patient motivation', either if they were sufficiently motivated to use the approach or expressed a specific interest in CCBT.

The theme 'To provide help sooner' was also described when choosing to offer CCBT. This involved the subthemes of providing faster access to an intervention or that help could be accessed sooner while waiting for further input. Expressions also involved a theme of assessing whether 'Clinically suitable', which had two themes, one including the presence of mild to moderate problems and the other non-specific reasons for being suitable or appropriate. The final theme involved patients' expressed preferences as 'Patient sought other options'. This had two themes: patients' problems attending appointments and lack of interest in other options, such as group or individual therapy.

Table 16. Themes and subthemes of participants' reasons for why they may offer CCBT.

Themes	Subthemes	Examples
Access	**Capable of using computers**	*"People were computer literate, bright"*
	Access to computers	*"… access to a computer"*
	Access to library	*"…could access venue available at times offered"*
Perceived effectiveness	**Intervention effective**	*"Works for most people - all can benefit somewhat"*
	Continues progress after therapy	*"Felt it was a good way for someone to maintain progress from therapy with a little support"*
Patient motivation	**Able to engage**	*"…when they are motivated to use a self help approach"*
	Interest in CCBT	*"The patient expressed a desire to use a computer /the internet to access any form of self-help they were comfortable using a CCBT approach…"*
To provide help sooner	**Fast access**	*"…quick access to intervention"*
	While waiting for further input	*"…provides patients with some help whilst they are on the waiting list"*
Clinically suitable	**Mild/moderate problems**	*"Offered to people with mild to moderate difficulties"*
	Suitable (non specific)	*"Pt clinically suitable"*
Patient sought other options	**Difficulty accessing appointments**	*"People expressing difficulty in making appts during surgery hours"*
	Not interested in other options	*"Not keen on Step Forward group intervention."* *"…interested to hear of other options besides 1:1"*

3.4.2.2 Reasons for choosing not to offer CCBT

When describing reasons for choosing not to offer CCBT to patients, five themes were expressed by participants, as seen in Table 17.

Table 17. Themes and subthemes of participants' reasons for why they may not offer CCBT.

Themes	Subthemes (if present)	Examples
Access	**Unable to use computers**	*"...if they are not computer literate"*
	Unable to access computers	*"Not accessible eg they don't use a computer for home based system"*
	Unable to access library	*"...they couldn't attend a library service as they work long hours"*
Perceived effectiveness	**Not likely to be effective**	*"In most cases it didn't fit with my formulation of their needs"*
	Clinician preferred intervention with human contact	*"...when there is a better treatment option they are willing to accept (e.g. stress course when people have limited contact with others)"*
Patient motivation	**Not able to engage**	*"If I felt a patient was not motivated to manage their own care"*
	Patient preference for individual therapy	*"...if they were very keen to be seen in one-to-one therapy"*
Perceived clinical suitability	**Unsuitable presenting problem**	*"...not appropriate (i.e. in the treatment other difficulties such as phobias, OCD)"*
	Severity of problem	*"I have never assessed someone where their difficulties were mild enough to warrant a CCBT approach"*
Clinician constraints	**Lacked knowledge of CCBT**	*"Not really felt I've known enough about package to know if recommending it would be appropriate for that individual"*
	Lacked time	*"...if you mean actually offered computerised CBT during a GP appointment then - no time!"*

As with participants' decisions to offer CCBT, the theme of 'Access' was expressed. Three 'Access' subthemes were if patients were unable to use computers, if they had no means of accessing a computer or could not access libraries at times offered. The theme of 'Perceived effectiveness' was also expressed. This had two subthemes, one being the

perceived lack of effectiveness of the intervention generally and the other involved the clinician expressing a preference for another intervention that included human contact.

Another theme for choosing not to offer CCBT was 'Patient motivation', which had two subthemes. One subtheme involved a judgement about whether patients were motivated to engage with the approach and the other subtheme involved patients' expressed motivation for individual therapy. 'Perceived clinical suitability' was another theme. This involved two subthemes, one that the patient's presenting problems were not appropriate (i.e. not anxiety or depression) and the other was that the patient's difficulties were too severe. A further theme was 'Clinician constraints', which were barriers in being able to offer CCBT, either due to the clinician's lack of knowledge of CCBT or, from one respondent (a GP), lack of time.

3.4.2.3 Reflections on themes for choosing whether or not to offer CCBT

There was a mixture of reasons expressed for why participants may or may not refer to CCBT. Common themes of 'Access' 'Motivation', 'Clinical Suitability' and 'Perceived Effectiveness' were found, some of which were also expressed in positive and negative themes of CCBT. Further examples of responses expressing 'Perceived Effectiveness' are shown below, indicating individual subjective views exist regarding the effectiveness of CCBT, which can vary and are involved in decisions to offer CCBT to patients.

> *"Prefer one-to-one therapy."*

> *"…previous experiences of briefer therapy have not been helpful."*

> *"Felt that they would respond well to a computerised intervention."*

> *"…resources that might help the patient while awaiting follow-up or referral."*

3.4.3 Perceptions of why patients may have accepted or refused to use CCBT

Participants' perceptions of why patients may have accepted or refused CCBT were gathered. There were 28 responses to the question: "*If you have offered CCBT to patients and they refused, please briefly describe why you think this was*" and 22 responses to the question: "*If any of your patients have agreed to trying CCBT, please briefly describe why you think this was*". Results of the analyses are shown in Tables 18 and 19.

3.4.3.1 Reasons why patients may have agreed to use CCBT

Table 18. Themes and subthemes of participants' views of why patients may have agreed to use CCBT.

Themes	Subthemes (if present)	Examples
Access	**Convenient**	*"Ease of access, convenience…and difficulties accessing frequent appointments with psychologist"*
	Quick	*"They were happy to try anything as soon as possible to help with their difficulties"*
	Format	*"…liked that didn't have to discuss emotions with others"*
Perceived effectiveness	**Proposed by clinician**	*"…when I explained that not everyone needs/wants individual therapy and that CCBT can be as good or better"*
	Expressed by patient	*"They felt it would be beneficial - generally prior to individual therapy"*
Patient motivation	**In computers**	*"Were keen to use computer, interested in technological approach"*
	In self-help	*"…liked being able to do things on their own terms"*
	In any extra help	*"Keen in theory for any extra help"*
Suitable (unspecific)		*"The approach felt suitable for them"*

Table 18 shows four themes were expressed as reasons for why patient may have agreed to use CCBT. One was 'Access', which fell into three subthemes. One was that patients were keen to access help quickly, secondly CCBT was convenient for them, for example if they had difficulty accessing appointments, and the third subtheme involved patients' difficulties in accessing face-to-face therapy so the computer format was easier for them. 'Perceived effectiveness' was another theme, either proposed by the clinician themselves (i.e. the patient was informed that CCBT was effective) or considered by the patient themselves.

The theme of 'Patient motivation' involved three subthemes, one expressing interest in using the computerised approach, one expressing interest in self-help and the other was more generally being keen for any form of help. Another theme of 'Suitability', which involved a broad reference to patient feeling that it was suitable for them, was also expressed.

3.4.3.2 Reasons why patients may have refused to use CCBT

Table 19 shows four themes were expressed for why patients may have refused CCBT. The theme of 'Access' involved three subthemes, one that patients did not have a computer, another that the location was hard to access (either due to privacy issues or opening hours) and the third was being unable to use computers. One theme was 'Perceived effectiveness', with patients expressing that they did not think it would be useful. A theme of 'Patient motivation' included lacking motivation for a computerised approach and lacking motivation to use self-help. The final theme was 'Human contact requested' and involved patients specifically asking to speak to someone, rather than just lacking interest in CCBT.

One statement: *"Did not wish to become involved in research"* was excluded from the analysis because it referred to not wanting to take part in a research study (which was the CCBT pilot project evaluation) rather than CCBT specifically.

Table 19. Themes and subthemes of participants' views of why patients may have refused to use CCBT.

Themes	Subthemes (if present)	Examples
Access	**No computer access**	*"…no computer in house…"*
	Location difficult	*"Not keen to use a public library computer/ at work during library opening times"*
	Unable to use computers	*"Lack of proficiency with computers"*
Perceived effectiveness		*"…didn't think it would work for them"*
Patient motivation	**Not interested in computerised approach**	*"…use of computer to learn skills didn't appeal to them"* *"They say they don't like doing things on computer"*
	Not motivated to use self-help approach	*"Didn't think they would be motivated to use it by themselves"* *"Not ready for self help"*
Human contact requested		*"Wanted to be able to speak with someone regarding their problems"* *"Wished to meet with therapist/others in same situation"*

3.4.4 Summary of Research Question 3

Using thematic analysis, what appealing or concerning aspects of CCBT do participants describe and what are the reasons why they may refer or not refer to CCBT?

Positive aspects of CCBT involved its increased accessibility for some, its perceived effectiveness as an intervention, its potential use alongside therapy, the faster access to help, the increased efficiency of resources and the improvements to services offered. Negative aspects involved restrictions of some in being able to access CCBT, its perceived lack of effectiveness, the motivation it requires from patients, how it can be

delivered effectively and safely, whether referrals will be suitable and anticipated negative reactions from patients if offered it.

Reasons why participants may offer CBT included consideration that patients can access the CCBT, that it will be beneficial for them, that they are motivated to use it, that help can be given sooner, that the presenting problems are suitable and it patients were asking for alternative options. Reasons why they may not have offered CCBT were if patients were unable to access CCBT, if they did not believe it would be helpful, if patients did not seem motivated to use it, if presenting problems were not suitable, if clinicians did not feel able to refer or if a patient requested individual therapy.

Perceived reasons why patients may have agreed to use CCBT included patients being able to access CCBT, believing it would help them, that they were motivated to use it or thought it was suitable. Reason why patients may have refused CCBT included patients being unable to access it, not believing it would be effective, not being motivated to use it, asking for individual therapy, not having an appropriate clinical presentation or not wanting to take part in research.

Therefore mixed clinicians' views about CCBT were evident in the data and mixed responses from patients were also described. Common themes of 'Access', 'Perceived Effectiveness, 'Patient Motivation' and 'Clinical Suitability' were expressed throughout, both in positive and negative aspects of CCBT and reasons for using it. Doubts about the effectiveness of CCBT included the lack of human contact and lack of individual approach, however some believed it would be of benefit, mainly due to the self-help format. Some anticipated that patients would find it impersonal, feel fobbed off and prefer to talk to someone but others thought it would be more suitable for some patients. Of those that had offered CCBT, their perceptions of patients' reasons for refusing it varied, such as being unable to access CCBT, doubting it would help or preferring other options including human contact. However, some patients were reported to have agreed to use CCBT and their reasons included this being a preferred or more accessible option.

3.5 Research Question 4

What are participants' views on how CCBT could be best implemented in order to optimise access?

Research question four was mainly analysed descriptively and involved three sections. Clinical psychologists' and GPs' responses referring to training were compared using chi-squared analyses, with a bonfferoni adjustment for three comparisons (p = .017).

- Who should deliver CCBT?
- Is there a need for training?
- How should CCBT be delivered?

3.5.1 Who should deliver CCBT?

From the total sample of 72, 71 gave their views on who should refer to CCBT. As Table 20 shows, most did not draw a distinction between professional groups and said that all should refer. Three quarters of responses said there should be open access, allowing patients to self-refer.

Table 20. Who should refer to CCBT.

Who should refer?	Yes (%)	No (%)	Total (n)
Primary Care e.g. GPs	60 (83.3%)	11 (15.3%)	71
Specialist Mental Health Services (e.g. Psychologists/Psychiatrists	65 (90.3%)	6 (8.3%)	71
Open access / self referral	54 (75%)	17 (23.6%)	71

Nine participants said that they felt CCBT was not suitable for their client group and their reasons are shown in Appendix 15. Reasons fell into two categories, one involving patients' difficulties in being able to use the computer packages, for example literacy or cognitive problems. The second involved patients' presenting problems being unsuitable, for example being too complex either because patients were triaged

beforehand for low-level interventions or because clients were within severe and enduring mental illness (SEMI) or older adult client groups.

3.5.2 Is there a need for training?

Need for training was examined through ratings of confidence in referring to CCBT, need to learn more in order to refer and request for training. Differences between GPs and clinical psychologists were examined. Although there were other professionals in the study, most were sparsely represented and so no other comparisons were carried out.

Confidence in referring

When asked to rate their confidence in referring to CCBT, responses varied across different groups of clinicians, as Table 21 shows.

Table 21. Participants' confidence in referring to CCBT.

Profession	Frequency of responses to Likert-scale rating: confidence in referring to CCBT							Mode
	1 Not at all	2 Not much	3 A little	4 Fairly	5 Reasonably	6 Very	7 Completely	
Clinical Psychologist	0	1	4	0	10	4	1	5
Health Psychologist	0	0	0	0	1	0	0	5
Specialist Psychological Practitioner	0	0	0	1	0	0	0	4
Trainee Clinical Psychologist	0	0	4	1	1	1	0	3
Clinical Associate in Applied Psychology	0	0	0	0	0	1	0	6
Trainee Clinical Associate in Applied Psychology	0	0	0	1	0	0	0	4
Guided Self-Help Clinician	0	0	0	1	0	1	0	4
Counsellor	0	0	0	1	0	0	0	4
Nurse: CPN, Senior Charge Nurse	0	1	1	1	0	0	0	3
Adult Mental Health Nurse	0	0	0	0	1	1	0	5/6
GP	1	6	5	8	7	2	0	4
Total (n=68)	0	8	11	16	26	5	1	5

As seen in Table 21, the modal response for all clinicians was 'reasonably' confident. GPs' modal confidence rating of 'fairly' was less than clinical psychologists' modal rating of 'reasonably'. When confidence was categorised into low (rating 1-4) and high (rating 5-7), a chi-squared analysis showed that lower confidence expressed by GPs (n = 29) compared to clinical psychologists (n = 20) in referring to CCBT was significant: χ^2 (1) = 9.156, p = .002.

Is there a need to know more about CCBT in order to refer?

Participants were given the opportunity to state that they did not wish to refer to CCBT but only three expressed this: one was a GP and two were trainee clinical psychologists. Two participants did not respond to the question, so from the remaining sample of 67 participants, 36 said 'yes' they did need to learn more about CCBT in order to refer to it (53.7 per cent) and 28 said 'no' they did not (41.8 per cent). As can be seen in Table 23, when clinical psychologists and GPs were compared, a greater proportion of GPs (18 out of 29, 62 per cent) said 'yes' compared to eight out of 20 (40 per cent) clinical psychologists. However, a chi-squared analysis showed that this relationship was not significant: χ^2 (1) = 2.772, p = .096.

Is there a request for CCBT training?

From the total sample of 72, 67 responded to a question on training. Table 22 shows that 45 (67 per cent) were interested in training and 22 (33 per cent) were not. Of the two largest professional groups, clinical psychologists were divided, with similar numbers wishing to have training as did not. Twenty-two out of 29 GPs wished to have training (76 per cent), which was a higher proportion than clinical psychologists (11 out of 20, 55 per cent). However a chi-squared analysis showed this relationship was not significant: χ^2 (1) = 2.343, p = .126.

Table 22. Participants' need to learn more about CCBT to refer and interest in training.

Profession	Need to learn more about CCBT in order to refer?			Interested in training?	
	Yes	No	Do not wish to refer	Yes	No
Clinical Psychologist	8	12	0	11	9
Health Psychologist	1	0	0	1	0
Specialist Psychological Practitioner	0	1	0	0	1
Trainee Clinical Psychologist	3	2	2	4	3
Clinical Associate in Applied Psychology	0	1	0	1	0
Trainee Clinical Associate in Applied Psychology	1	0	0	1	0
Guided Self-Help Clinician	2	0	0	2	0
Counsellor	1	0	0	1	0
Nurse: CPN, Senior Charge Nurse	2	0	0	0	2
Adult Mental Health Nurse	1	1	0	2	0
GP	18	10	1	22	7
Total (n=67)	36	28	3	45	22

3.5.3 How should CCBT be delivered?

Table 23. Agreement and disagreement on where CCBT should be delivered.

Where should CCBT be delivered?	Yes (%)	No (%)	Total (n)
Home	48 (66.7)	23 (31.9%)	72
Clinic	24 (33.3)	47 (65.3%)	72
Library	30 (41.7%)	41 (56.9%)	72
Work	5 (6.9%)	66 (91.7%)	72
Patients should be able to choose	58 (80.6%)	13 (18.1%)	72

There were mixed views of where CCBT should be delivered, as shown in Table 23. The most common response from 58 respondents (80.6 per cent) was that patients should be able to choose the location, then 48 (66.7 per cent) said that CCBT should be done at home. Views on clinics and libraries were more divided and slightly less favoured. The least popular suggestion was work, with only 5 responses (6.9 per cent).

Other suggested locations were: mobile devices / 'apps' (1), health centre (1), college (2), community venues (2), internet cafes, psychiatric wards or day hospitals (1), GP surgery (1). One participant specifically stated 'not in a library' and another provided an extended response related to library use that highlights the mixed views of this location:

> *"Some patients really seem to like the library set up of BtB whereas others don't. Some prefer to do it at home, but I find home life tends to get in the way and people don't engage as well. In* [another NHS region] *clients come in to a designated clinic room and this seems to work well, with a full time CCBT co-ordinator employed to meet and greet/discuss technical aspects".*

3.5.4 Summary of Research Question 4:

What are participants' views on how CCBT could be best implemented in order to optimise access?

Just over half of all clinicians felt they needed to learn more about CCBT and would like to receive training, with GPs expressing significantly less confidence in referring than clinical psychologists. A slightly higher number of participants were interested in receiving training compared to numbers wishing to learn more about CCBT. Most suggested CCBT should be offered by all tiers of clinicians and patients should also be able to self-refer. Most agreed that patients should be able to choose where they access it and that it should be available at home. There was less agreement about certain public locations such as libraries or clinics and most disagreed with work as a location.

4 DISCUSSION

4.1 Overview of Research Aims

This study investigated clinicians' views of CCBT and factors related to referrals, to understand more about possible individual and systemic barriers to referrals,and ways that CCBT might be better implemented to optimise access. The study arose following the researcher's experience of low referrals during a CCBT outcome pilot project. As a result of this experience, the researcher decided to investigate reasons for low engagement and take account of perceived limitations in the CCBT evidence-base, which mainly stem from uncertainty about efficacy in clinical settings, acceptability and barriers to uptake. This also included consideration of social and organizational research, which indicates the potential influence of various social and organizational factors in changing staff referral behaviour. The role of clinicians in uptake into CCBT has rarely been considered in outcome studies and there is some evidence that clinician-related variables and attitudes may influence their use of CCBT (Whitfield & Williams, 2004). The four main research aims of this study were to investigate: (1) clinicians' views of CCBT, (2) whether clinician-related or systemic variables are predictive of reported likelihood to refer, (3) themes involved in the referral decision-making process and (4) how CCBT might be better implemented.

4.2 Interpretation of Research Findings

4.2.1 Research Question 1

Clinicians' first impressions, ratings of benefits and concerns, level of approval and perceived uptake by patients were mixed. Although negative attitudes towards CCBT and other internet-based interventions have been found (Mora *et al*., 2008; Whitfield & Williams, 2006), a high prevalence of negative views was not found in this sample. There were more positive than negative first impressions and ratings of approval of CCBT were positively skewed (although the possibility of a biased sample is discussed later). In fact only nine participants (12.5 per cent) disapproved, which suggests more of the sample held positive views. Although these specific questions were not asked in

other surveys, Wanberg *et al*. (2007) found overall neutral views towards e-therapy, with only 3 per cent finding this unacceptable. However, their study did not refer to CCBT but online interventions and mobile phone-based short messages service (SMS). Whitfield and Williams (2004) found approximately half their participants rated "do not know" to views on effectiveness and patient responses to CCBT. They found more participants rated CCBT as less useful compared to individual therapy but equal to written self-help. This indicates views of CCBT may be predominantly mixed or undecided. This could reflect conflicting attitudes within individual clinicians, as described in theories of cognitive dissonance (Festinger, 1957), or individual differences among clinicians (Hogg & Vaughn, 2011).

Mixed views were also found from Likert-scale ratings of potential benefits and concerns, as most participants agreed with both to some extent (see p.57, Table 5). Benefits of increasing access to those in rural areas and with busy schedules were rated highest. The greatest concerns involved establishing a working alliance and technological problems. Clinicians were overall undecided about whether CCBT would increase caseloads, or make it more difficult to monitor patients in danger, increase expense or lacked legal guidelines. Disagreement with CCBT as being more open and expressive than face-to-face therapy is likely to reflect the lack of human contact. Data from this current study are reasonably consistent with results reported by those that developed the items (Mora *et al*., 2008), though there was overall stronger agreement found in the current study on items referring to potential benefits. Patterns of responses that showed some variation could be explained by the fact that Mora *et al*. (2008) used these items for online therapy, which involves direct clinician input rather than a self-help approach. For example their sample disagreed that it would help patients with busy schedules, agreed less on the flexibility for clinicians' schedules and there was more concern over legal guidelines. This comparison of results with online therapy suggests that clinicians may identify more benefits in CCBT.

Despite many positive first impressions of CCBT and most participants' approving, perceived patient uptake was rated with less enthusiasm in this study. Nearly half rated

the mid-point of 'sometimes' and although responses seemed normally distributed, a mid-point response could also reflect uncertainty about whether patients would agree to use CCBT. As most identified both benefits and concerns, this suggests that clinicians' decision to use CCBT with patients is a difficult one, owing to conflicting viewpoints. This would be supported by psychological theories of attitudes and behaviour, that decisions to act can involve several different attitudinal factors (Hogg & Vaughn, 2011). There were no significant differences in responses between GPs and clinical psychologists, so this was not a factor that influenced the views of this sample. However, these results alone do not show how likely it is that participants will actually use CCBT and this is examined further in research question two.

4.2.2 Research Question 2

Participants' ratings of their likelihood to refer were mixed, which might be expected. They were higher than perceived uptake by patients, with the mode of referring 'fairly often' greater than the modal mid-point response for uptake of 'sometimes'. Just 8 per cent rated likelihood to refer higher than 'fairly often'; nevertheless a reasonable rate of referral was indicated. This might be surprising considering the low rate of referral during the pilot project. However, only a third of the sample was involved in the pilot, of whom only two had not referred to CCBT (see discussion of possible sample bias, section 4.3.3, p. 100).

The study found no significant associations between ratings of likelihood to refer and knowledge/experience of CCBT, confidence in referring to CCBT, familiarity with computers (liking or use of) or preferred low-intensity intervention. This was also the case with variables of age, length of clinical experience and profession of GP or clinical psychologist. There was no significant association with preferred therapeutic orientation, which contradicted data reported by Wanberg *et al*. (2007) and Mora *et al*. (2008) who found differences between those preferring CCBT and psychoanalytic or dynamic approaches. However, the results in the present study are not directly comparable due to the different comparison groups of CBT and eclectic, which included a high proportion preferring CBT and few psychodynamic or psychoanalytic approaches. A lack of

association with knowledge/experience of CCBT contrasts with Whitfield and Williams (2004), who found that a lack of knowledge about CCBT was expressed as a barrier that needed changing in order for clinicians to refer to CCBT.

In the current study, clinicians' ratings of their likelihood to refer to CCBT was significantly associated with their ratings of approval of CCBT and perceived uptake by patients. This suggests clinicians' subjective views of CCBT and how it will be received by patients are predictive of likelihood to refer. A lack of association between likelihood to refer and preferred low-intensity intervention was surprising, as it may seem a relevant organizational factor, if more than one intervention is available, unless clinicians offer all of them and let patients choose. The fact that only 19 per cent preferred CCBT and 73 per cent preferred guided self-help clinicians or the stress management course is a useful finding that indicates some interventions are more preferable than others. The most popular are those with some element of face-to-face contact. This might suggest a strong belief in the efficacy of such contact, but may also be influenced by the prevalence of such methods as 'tried and tested' options within the department. This finding could be compared to self-help surveys that found only 24 per cent of clinicians used technology-based self-help (Audin *et al*., 2003) and as few as 6.9 per cent used CCBT (Keeley *et al*., 2002). However, these responses were mainly in comparison to just written self-help, rather than the wider range of low-intensity options in the current study. Preference for written self-help compared to CCBT has also been found in a clinical setting during an outcome study (Clarke *et al.*, 2009). However, in the current study, only a small proportion preferred written self-help (4.3 per cent), so this was even less popular than CCBT. Nevertheless, preferred intervention was not significantly associated with likelihood to refer, which suggests other factors are perhaps more important.

A significant association was found between likelihood to refer and opportunity to see mild to moderate mental health problems, which would make sense as CCBT packages are designed for mild to moderate difficulties. Therefore CCBT could be used by a wide range of professionals who see less severe cases. This indicates that use of CCBT by

clinicians involves organisational factors, in terms of the position clinicians work in within the mental health system. This presence of organisational factors agrees with the organisational change literature (Buchanan & Huczynski, 2004). This contradicts the organisational design of the CCBT pilot, which involved most referrers working within the clinical psychology department. Those clinicians in this department that were in the higher referring group tended to work with a higher proportion of people with mild to moderate problems (such as the guided self-help clinicians and clinical associates in applied psychology). A much larger group of potential referrers, GPs, seem more likely to refer than highly specialised clinical psychologists. Differences among professions have not been examined in previous surveys, which focused on similar groups of therapists (Mora *et al*. 2008; Wanberg *et al*., 2007; Whitfield & Williams, 2004).

4.2.3 Research Question 3

When qualitative views were examined, most clinicians expressed both appealing (n = 65) and concerning (n = 68) aspects of CCBT. This was also found in research question one, as most agreed with both potential benefits and concerns. These results suggest individual clinicians experience conflicting views rather than being either strictly 'for' or 'against' it (as in the theory of cognitive dissonance). Both qualitative and quantitative data expressed benefits of CCBT in increasing access (e.g. for those living remotely or with agoraphobia) and its convenience. Participant responses in the qualitative section of this study indicate further expressed positive aspects of CCBT that involved clinical benefits, the option for use as an adjunct to therapy, less waiting time, increased efficiency of resources and improvements to services. Only two concerns from the quantitative list were also expressed in the qualitative data, and these involved patient risk and the therapeutic relationship. Further concerns expressed qualitatively were restricted access, perceived effectiveness (including lack of human contact), patient motivation needed, how CCBT would be delivered (including monitoring of progress and risk), suitability of referrals and the acceptability to patients if offered. Differences between the quantitative and qualitative data may indicate different views of online therapy versus CCBT or it may reflect the limitations of a solely quantitative study design and the items devised by Mora *et al*. (2008).

Similar themes were expressed across both positive and negative aspects of CCBT. For example, CCBT could be more accessible for some patients but not others. It may be more accessible for those that prefer the computerised format or cannot attend individual appointments but others may not have a computer, sufficient computer skills or feel able to go to a library to use it. For those that commented on the effectiveness of CCBT, positive comments generally referred to the self-help format, although the format was mostly considered beneficial in terms of making it more accessible. However, the mixed views of perceived effectiveness are highlighted in concerns expressed about CCBT not being effective. Comments included underlying beliefs about the nature of therapy, particularly in the need for human contact and an individual approach. CCBT therefore conflicts with these beliefs for some clinicians and suggests they are unlikely to use it (considering theories of attitude and behaviour, section 1.6.1). It also raises the question of whether at least some of these views are similar for other low-intensity interventions such as written self-help, or just apply to CCBT.

When the decision to offer or not offer was examined, the theme of perceived effectiveness was again expressed. This indicates that clinicians who endorse negative views about the effectiveness of CCBT report this influences their decision to offer CCBT to patients. This is consistent with data reported by Hetherton *et al.* (2004), who found GPs' reluctance to refer to CCBT was mainly associated with beliefs that it would not be effective. This finding was also reported by Whitfield & Williams (2004), who concluded that *"perceived lack of knowledge by the practitioners about the evidence-base for the effectiveness* [of CCBT]*...needs to be addressed"* (p. 64). Access to CCBT and patient motivation were other recurring themes in the current study, which were expressed when considering whether or not to offer CCBT. This was in terms of patients' ability to access computers or libraries and to use the programme. Assessing patient motivation was important both in being able to engage with a self-help approach and a computerised format. As would be expected, clinical judgment regarding whether problems were suitable, and consideration of patients' preferences, also influenced whether CCBT would be offered. A further theme involving constraints of clinicians

influenced their decisions not to offer CCBT. Therefore, understandably, if clinicians are informed about CCBT and how to refer and have time to do so, they would be more likely to refer. A number of factors are therefore involved in choosing whether to offer CCBT, including clinical judgement, practicalities of patient access and clinicians being able to offer it, as well as views not only of patients but also clinicians.

Clinicians' perspectives of patients' views suggest that in practice some patients can access CCBT, it can be more convenient and they can be happy to use it. On the other hand, some patients may be unable to access or use computers or are unwilling to use it at a library. Responses from participants also indicated that some patients prefer individual therapy, some specifically wish to speak to someone and can also believe CCBT will not help them. Some of these views relate to a lack of motivation for trying all forms of self-help, however some are specific to CCBT. This suggests that, as participants had expressed, some patients will respond positively to being offered CCBT and others will not. This indicates that decision-making for both referrer and patient is complex, and assumptions that everyone will take to it, or that no-one will, are equally inaccurate. In reality it would be useful to offer CCBT as one of a number of options that patients can choose from.

It may be that if the range of possible patient responses to CCBT is discussed with clinicians, they may feel more confident in offering it, whereas if clinicians withhold offering CCBT due their own view that it will be unhelpful, this may be an unwarranted barrier that may contribute to low referrals. In terms of understanding possible reasons for low referrals to the CCBT pilot project, it is important to consider that some patients may not have wanted to take part in the research rather than the intervention. This was expressed in the study, but only by one participant, so this may not have been a large factor. What was also interesting from participants' reports of patient responses was the subtheme that attributed agreed use of CCBT to perceived effectiveness proposed by the clinician. This indicates that views and information given by clinicians at the point of referral can influence whether patients engage, which has also been suggested in other qualitative research on views of self-help (Khan *et al.*, 2007).

4.2.4 Research Question 4

Participants thought that both primary care and secondary care clinicians should be able to refer. However, the results from research question two showed that referrals are more likely to be made by non-specialist mental health professionals such as GPs, self-help clinicians and others working with more mild-to-moderate cases. Those working with cognitive problems or severe and enduring mental illness are unlikely to refer, which would be expected as patients would find it harder to engage with the programme. Although higher specialist mental health professionals may be less likely to refer, there was evidence that some still wish to. Interest was expressed in using CCBT with patients alongside therapy, as was also found in other surveys (Mora *et al*., 2008; Whitfield & Williams, 2004), so this would be important to consider implementing.

There was a desire for CCBT training among just over half of all clinicians (see table 22, p. 86), with more GPs than clinical psychologists expressing a lack of confidence in referring. Similar levels of interest in training among therapists were found by Whitfield & Williams (2004). Considering GPs were one of the professional groups most likely to refer, it would be sensible to direct resources and training towards GPs as potential referrers. As reduced waiting time was a positive aspect of CCBT and a theme in decisions to use it, this may be something clinicians (especially GPs) could provide more quickly and, as also proposed in the qualitative data, could be used while patients are on a treatment waiting list. Nevertheless, the number of concerns expressed suggests that training alone is unlikely to overcome all the barriers to using CCBT, especially as both knowledge/experience of CCBT and confidence in referring were not associated with likelihood to refer.

In the current study, most participants' suggested CCBT should be delivered in a way that provides greatest access to patients, particularly enabling patients to choose where they do it and also that it can be done at home (see tables 20 & 23, p. 83 & 86). There was less agreement about certain locations such as libraries or clinics and most disagreed with work as a location. It seems, when also considering the qualitative data, that some

patients are concerned about privacy issues at libraries and are restricted by opening hours. There were more positive expressions about patients being able to work from home than in libraries; however, it would be important to still ensure some level of support is provided as this is associated with better clinical outcomes (Gellatly *et al*., 2007). It seems likely that different methods of access will suit people differently and therefore having the flexibility to offer different options would be preferable.

In addition to individual and systemic factors investigated in the current research, it is also important to consider that further organisational issues relevant to the current NHS, may impact on change, and therefore influence the implementation of CCBT. Most notably, the current economic climate could be a strong influence on the direction of change and research. Research and change requires resources and staff, and these are limited with current threats to NHS jobs and reduced NHS spending. Due to the numerous policy drivers, and various professional groups and services in the NHS, scarce resources may be redirected to other priorities. In addition, clinicians' willingness to engage in research and changing practice may be compromised from over-researching. Potential participants can become 'fatigued' and reluctant to engage by repeated requests to undertake research, and this is more likely to occur in groups involved in large volumes of research (Clark, 2008), NHS clinicians may be regularly approached to participate in research or changes to their practice. Resistance to research projects may be due to the additional time required, for example in discussing research or new interventions with patients and obtaining consent. Pressures already exerted on NHS clinicians to see patients rapidly and reduce waiting lists may further impact on willingness to engage. Research was found to be a restraining factor for implementing change and research in the NHS in a study by Hetherton et al. (2004) (discussed on p. 23), when GPs' reasons for not referring to a CCBT trial included the added time needed for the research and the belief that it may be a lesser treatment option for patients.

4.3 Methodological Considerations

4.3.1 Study Design

The study arose in response to low referrals to an outcome study, reflecting the practical and relevant nature of this research and application of the scientist-practitioner approach. The lack of research on the topic necessitated the development of a survey, and the ability to tailor the measure in this way is a strength (Slade & Priebe, 2006). However, relying on a self-report approach has disadvantages, due to possible biases in responding behaviour. This could compromise the validity of the data and therefore results must be interpreted cautiously. The attitude-behaviour literature (discussed in section 1.6.1) indicates that this is a compex process, and there may not be a direct relationship between participants' views and their behaviour when completing a survey. Potential biases include 'social-desirability' and 'evaluation apprehension', if the respondant's consideration of how their response will be viewed influences response behaviour (Hogg & Vaughan, 2011). This may have created a bias in the results in favour of CCBT, and the survey was made anonymous in an attempt to reduce these subject effects.

Further influences on survey response behaviour could include variation in respondents' feelings on the day, or other motivating factors, such as a desire to influence psychology service provision, regardless of views on CCBT specifically. Additional limitations are the possibilities of demand characteristics or 'response set' arising, if questions are worded in a way that steers respondents towards certain responses (Hogg & Vaughan, 2011). The careful selection of questions, neutral tone of the survey and a survey pilot attempted to minimize this. Nevertheless, other non self-report measures could have been used to investigate referral behaviour, to address these issues. For example, audit information on referral behaviour to CCBT and other low-intensity interventions could have been gathered. Furthermore, the cross-sectional design does not give an indication of views and use of CCBT over time, if indeed low referrals are a reflection of low uptake of innovation or social change, which may change over time. In addition, views from clinicians clearly only reflect one side of the coin and do not take into account patients' views. However, attempts were made to gather information about patients'

responses from clinicians' perspectives. As the small amount of research on CCBT uptake typically focuses on patient acceptability and satisfaction (Waller & Gilbody, 2009), it was considered important to investigate views of clinicians.

The development of a questionnaire or survey creates possible limitations in reliability and validity (Burns *et al*., 2008). In terms of reliability, questionnaires should be consistent in measuring what they intend to measure, in similar circumstances and over time. Validity refers to the degree to which what is measured is actually what is intended to be measured. Reliability involves both external and internal consistency. In terms of external reliability, measures can be repeat tested with the same participants, over time, to assess stability over time (or 'test-retest' reliability). This was not carried out in the present study, due to unfortunate time restrictions, so this is a limitation when drawing conclusions from the results. Internal reliability refers to the consistency of items within a questionnaire and whether respondents score similar items in similar ways. When a number of items are used to measure a particular variable or construct, it is important that the items actually measure this construct, rather than something else. This can be assessed using psychometric tests such as the Guttman spilt half or Cronbach's alpha, to measure how much participants vary in their scores on individual items (Clark-Carter, 2004). This test was not carried out in the present study because each item was analysed individually to obtain more detail on the pattern of responses (rather than to produce a summative scale). If Cronbach's alpha is used on items in this survey, the values are .679 for the 7 seven-point Likert-scale items relating to views of CCBT and familiarity with computers, and .662 for the 15 five-point Likert-scale for benefits and concerns of online therapy taken from Mora *et al*. (2008). Ideally, an acceptable Cronbach's alpha is > .7, so the internal reliability of these items would be questionable if used as a multi-item scale (Clarke-Carter, 2004).

The development of a multi-item scale for attitude towards CCBT, using the psychometric tests described above, could create a more reliable measure than the survey in the present study. Issues of reliability and validity could also be addressed by further psychometric testing on a multi-item measure, using data reduction techniques such as factor analysis, to develop variables and improve the construct validity of the

scale (Clark-Carter, 2004), A measure with this psychometric evidence could be used more confidently, with other samples and settings, and stronger conclusions could be drawn from the results.

In consideration of issues of validity, effort was made to improve face and content validity, so that questions could be interpreted appropriately and consistently among participants in order to gather the intended data. This included piloting the survey and using items devised in a previous study. However, opportunities for misinterpretation may have remained, for example participants may have had different understandings of what CCBT involved. The previously used Likert-scale items on benefits and concerns may have been limited in their application to CCBT as they were developed for views of online therapy (Mora *et al*. 2006). This was helped by the inclusion of qualitative questions on benefits and concerns, and these were presented before the Likert-scale items to prevent influences on qualitative responses. Attempts were made to specify views and use of CCBT by questioning this in different ways using single items, such as approval, perceived patient use, likelihood to refer and preferred intervention, as suggested by attitudinal research (Hogg & Vaughan, 2011). However, limitations of the Likert-scale items were that they reflected perceptions of participants rather than reflecting practice, for example rating 'likelihood to refer' rather than assessing actual referrals. In summary, an assessment of the issues of validity and reliability highlights limitations, particularly with the lack of psychometric evidence for the survey as a robust measure of attitudes, which means that caution must be taken in drawing conclusion from the results. Nevertheless, the mixed qualitative and qualitative design (see section 4.3.2) enables some comparison of this data and therefore an opportunity to improve the validity of the results.

4.3.2 Analytic Strategy

A mixed quantitative and qualitative study design helps to elicit multiple perspectives on a topic, leading to a richer understanding and reducing limitations of a single method study design (Tashakkori & Teddlie, 2003). However mixed methods also have their limitations. For example, open-ended questions lengthened the survey and could have

reduced the response rate. Open-ended questions may also have restricted the depth of qualitative analyses in comparison to the use of interviews or focus groups. The quantitative analyses used non-parametric tests, which were appropriate for the data but are less sensitive and therefore more likely to miss differences between groups (Field, 2009). Also, multiple tests increase the likelihood of significant results arising by chance, however Bonferroni adjustments were made.

All qualitative analyses are limited in being influenced by the researchers' own views (Braun & Clarke, 2006). The researcher took a reflexive stance and acknowledged their own mixed views of CCBT. This included first impressions, prior to the research, that computers could not replace therapists but may offer help for mild problems. Following involvement in the CCBT pilot, these views evolved as the researcher learnt more about CCBT and challenges in providing access to psychological therapies. During the period of the current study, their view was that although CCBT could never suit everyone, especially those with complex problems, there is evidence it can help some, and all opportunities to increase access to psychological therapies are important to investigate. The researcher's beliefs were also influenced by experience of the CCBT pilot, which led to questions about the views and use of CCBT by clinicians and whether barriers existed, for example preferences for other interventions or negative attitudes towards CCBT. However the researcher used an inductive approach and did not have a vested interest in CCBT packages, unlike many other CCBT studies that have been conducted by creators of these packages. Nevertheless, the validity of the qualitative analysis could have been improved if an additional researcher had also categorised the data.

4.3.3 Sample Characteristics

A strength of the study's sample was that it sought views from a range of potential referrers and professions, which has not been explored in previous surveys (Mora *et al*., 2008; Williams & Whitfield, 2006). However, the wide variety of job titles led to problems in being able to compare professional groups. There was even variation within the psychology department, which could not be examined as a whole because clinicians work with a range of complexities of presenting problems. Therefore, comparisons

between professions focused on clinical psychologists and GPs because these were the largest represented group. The sample was also poorly represented by nurses. Considering the variance of having multiple professionals within the sample, it was useful to have excluded those who did not work with an adult population to try to reduce confounding variables. Nevertheless, it would be still useful to examine the efficacy and use of CCBT with other client groups.

It is important to acknowledge that the sample may have been biased towards those more likely to be open or positive to CCBT. A high proportion liked computers and used them frequently (which was also the case in Whitfield & Williams, 2004) and most said they approved of CCBT. Responses may have been more likely from frequent users of computers because it was an online survey, however this format may also have been important in improving the response rate due to its convenience. There were also a high proportion of participants that favoured a CBT approach, from responses to preferred therapeutic orientation. Views of those in the pilot project who had not referred to CCBT were under-represented (only two participants), with a bias towards those that had referred. In considering these biases, the sample may have been less likely to have negative attitudes towards a computer-guided CBT approach. There was certainly a high proportion that approved of CCBT, which correlated with likelihood to refer, however there were no significant associations with ratings of liking or use of computers. It is also important to consider that the sample's high use and liking of computers may just represent the high use of computers in the general population.

4.3.4 Generalisibilty

Considering the possible sample biases, results may be restricted in their generalisability because this could be an underestimation of the proportion of clinicians who might disapprove or dislike CCBT and therefore be less interested in referring. However, negative opinions of CCBT involved in decisions to offer it to patients were still evident in the qualitative data. Although there was a relatively high response rate from those in the Psychology Department (61 per cent), the response rate from GPs was low (12 per cent) so it is harder to generalise findings to GPs. However, the number of responses

from GPs was encouraging, indicating the possible salience of extra psychology intervention options and their possible receptivity to using CCBT. It is also important to recognise that results are relevant to this particular clinical setting and geographical area, therefore it is unclear how generalisable results are to other areas.

4.4 Clinical and Service Implications

The results of this study have implications for the local NHS service in planning the future use of CCBT and how to implement it. This should be disseminated to the local area through presentation of the current research. It also raises issues that are relevant for other areas to consider. Locally, results must be combined with outcome measures from the CCBT pilot project to ensure that patients were benefitting clinically and determine whether there was a difference between the use of *Beating the Blues* and *Living Life to the Full*, which would also influence future services offered. An analysis of cost and organisational demands is also necessary to find out whether a CCBT service is sustainable, as the *"high-maintenance"* of organising and running such a service has been reported, for example when trying to coordinate support (Fox *et al*., 2004, p.167).

Nevertheless, this study suggests some clinicians are interested in using CCBT but these are mainly clinicians with more access to mild to moderate cases (e.g. GPs, guided self-help clinicians). Resources should therefore target these potential referrers, to enable them to provide access to CCBT, however this has implications on who provides support and how it is funded. Results also indicate training should be provided (especially for GPs), which should include information on the up-to-date evidence-base so that clinicians have an informed view of its effectiveness, rather than uncertain subjective opinions that could influence decisions to use it. Given that potential referrers have demonstrated a concern that patients want only treatment that involves talking to someone, training should also include evidence of patients' views on CCBT, specifically that a proportion of patients are indeed interested and satisfied with the approach. However, it is also reasonable to acknowledge that if clinicians have negative views of CCBT these may not change, despite training and education. In addition, evidence for the efficacy of CCBT is still limited and, as would be expected, some patients do dislike

the approach. Nevertheless the provision of up-to-date information is important so that clinicians can make an informed choice to refer, and patients can make an informed decision whether to engage.

Fewer resources should be directed into delivering CCBT through clinicians working with more complex cases (such as clinical psychologists), however some still expressed an interest in directing patients to this. It might be helpful to consider implementing it as an adjunct to therapy or waiting list initiative, which some had expressed interest in. However other low-intensity options are also available, for example the 'Step Forward' stress course delivered within the area of the present study, so it is important to consider how these fit together and which are more popular and effective (with both clinicians and patients). This is because although participants did not disapprove of CCBT, most preferred other interventions. It would also be necessary to ensure services do a cost analysis on implementing CCBT, not only among other CCBT packages with different support options but also other low-intensity interventions. Referring to self-help clinicians was most popular so it may be worth considering expanding this service. Ideally, it would be good to offer patients as wide a choice of intervention as possible and maximise access to psychological interventions (Scottish Executive, 2006). However, if potential referrers are content with current 'tried and tested' low intensity interventions already offered, an additional option of CCBT may simply not be in strong demand by referrers.

In considering expressed benefits and concerns, if CCBT is offered it should involve some form of support, preferably face-to-face, which agrees with the evidence-base that shows support is important (Gellatly *et al*., 2007). Participants were concerned about the lack of individualised approach and human contact so clinicians may be more likely to offer CCBT if they know support is provided. This might involve brief contact mid-way through and at the end of the programme. However, support offered influences costs of implementing CCBT and this needs to be considered. CCBT without support still shows improvements for some people (Titov, 2007), most likely the milder cases, therefore GPs could identify and direct patients to unsupported packages sooner, as a preventative

intervention. Concern was also expressed about library locations, so this should be considered alongside patient feedback as to whether this should continue as an option. If participants' views are considered, then access to CCBT should be made as open as possible. This might include advertising the existence of programmes to the general public more, for example the free access *Living Life to the Full* and *Moodgym* websites. Nevertheless, not every home has access to a computer so community locations are still important but may be more accessible if greater privacy is provided, for example with privacy screens or separate rooms.

From a wider perspective, the results (together with the review of CCBT studies in the Introduction chapter) suggest that CCBT may have been included in NICE guidelines before sufficient research into implementation and acceptability issues was carried out. Recommendations for implementing CCBT, or indeed any new intervention, should first consider its acceptability to both patients and clinicians and also how it might fit with existing services and interventions. It would be useful for services to communicate more about experiences of trying to implement CCBT, different approaches taken, and what does or does not work to inform implementation guidelines. There are implications for the design of stepped-care services in adult mental health, namely the issue of which different low-intensity interventions are offered, and whether these are the most effective and preferred options (by clinicians and patients). This study shows that it is important to consider not only whether interventions are potentially effective but also whether they will be used, by both patients and referrers, to maximise access to psychological therapies and ensure resources are used efficiently.

4.5 Directions for Future Research

Results from the present study generate a number of questions and directions for further research on implementing CCBT in clinical settings, particularly clinician (and patient) acceptance and long-term effectiveness. This is important because many services are currently trying to implement CCBT, due to NICE guidelines, but may waste resources if programmes are not used. Richer information on clinicians' views and likelihood to use CCBT could be gained from further qualitative analyses using interviews or focus

groups. Clearly more research on patients' views and use of CCBT is also highly relevant, so that both perspectives can be considered together in informing the implementation of CCBT in services. It would also be important to examine attitudes and referrals to CCBT over time, as some barriers may be due to natural delays in responding to change (Williams & Martinez, 2008) rather than fundamental problems in accepting CCBT itself. This could be the case as many participants did express approval of the intervention, therefore referrals may increase as some clinicians become more familiar with this option or more aware of the evidence-base. This could include evaluating training and the impact of this on views of CCBT and referrals. Furthermore, long-term outcome studies are required to find out whether clinical effectiveness and service improvements occur and are also maintained over time.

Further research should consider the organisation of CCBT in services, potential resistors and drivers to uptake, and the process in which it is implemented, to learn more about how to facilitate its implementation from a social-psychological perspective. CCBT should be evaluated as an adjunct or waiting list initiative as most research has examined it as an alternative intervention, while many participants seemed less keen on this approach. This could help patients access help sooner, reduce waiting lists if patients benefit sufficiently before being seen, or reduce the length of individual therapy. CCBT could also be evaluated as a preventative intervention offered by GPs or accessed openly. Such research would also need to consider the cost-effectiveness of each of these different methods of implementation.

Further CCBT implementation studies are required, particularly for identifying optimal methods of access. Most participants suggested that CCBT should be openly available for self-referrals and therefore open access to supported CCBT in clinical settings could be trialled and evaluated. This includes open access to unsupported programmes. While this is already possible, these websites should be advertised more. Unfortunately gathering evaluation data for unsupported CCBT is likely to prove difficult, as the pilot project experienced when trying to evaluate *Living Life to the Full*. Sources of referral should also be audited and compared to monitor which professional groups refer more

commonly, as results in the present study suggested higher referral rates would come from those with more access to mild to moderate problems. This would help to ensure resources are targeted at those referrers who find it most relevant to their practice. In addition, more cost analyses are needed to compare different packages and methods of delivery, for example costs of community premises for hosting CCBT and costs of providing different types of support (such as employing a support person and what training background is required).

Although the present study focuses on the views and use of CCBT, it highlights the need for further research on the variety of low-intensity intervention options, to explore which are actually the most preferred and effective to inform the design of stepped-care services. More understanding is needed of preferred interventions of patients and clinicians. This includes research into possible barriers to accessing to other low-intensity interventions, particularly those that also lack human contact, such as written self-help. It is also imperative that costs to services are taken into account when trying to decide which low-intensity interventions to offer (whether this is CCBT or not). Services would also benefit from research into identifying effective elements of low-intensity interventions, for example whether human contact is important or if some people can benefit sufficiently without. If further evidence is found to support CCBT or non-talking treatments, this could help increase confidence in their perceived effectiveness and consequently increase access to them. This also raises the question of how to identify those that could benefit and those that would not, which suggests further studies examining suitability for CCBT and similar low-intensity interventions. Research therefore needs to inform strategies to implement not only CCBT but also other low intensity interventions to increase access to psychological input and utilise resources efficiently.

4.6 Conclusions

This study found mixed and conflicting views of CCBT among participants, most of whom identified both benefits and concerns. Most approved of CCBT, but their ratings of likelihood to refer and perception of patient uptake were more varied, with many

preferring other low-intensity interventions. Clinician-related and systemic variables predictive of likelihood to refer were opportunity to see mild to moderate cases, approval of CCBT and perceived patient uptake. This indicates that both individual views of CCBT and the organization of CCBT within services are important. Positive and negative views about the effectiveness of CCBT and acceptability to patients were expressed and perceptions that CCBT was not effective were included in reasons not to offer it. It seems that key aspects of CCBT can conflict with some clinicians' beliefs about the crucial components of effective therapy, predominantly the belief that human contact is important.

Therefore, results suggest that low clinician acceptability can be a barrier to patients' accessing CCBT but also that other factors are involved (such as organisational problems with access or patient acceptance). Nevertheless, there was moderate interest in referring to CCBT and in receiving training. Such training could provide clinicians with an informed view of the CCBT evidence-base. Although GPs had not been included in the CCBT pilot project, many expressed interest in referring to CCBT and in receiving training. The implementation of CCBT should concentrate on potential referrers with more access to mild to moderate problems (e.g. GPs), and could be used as an adjunct to therapy, rather than an alternative to treatment, by mental health clinicians. Most felt that CCBT should be accessed as widely as possible and supported self-referrals.

This study highlights the possible need to consider clinicians' views and use of CCBT, along with views of patients and consideration of other low-intensity options, before implementing it in services. It seems that there is a position for CCBT within stepped care services but CCBT also remains a relatively new intervention, and the implementation of change and innovation in health services can often face resistance and challenges (Slade & Priebe, 2006). Therefore, although the viability and efficacy of CCBT are still questionable and require further research, this may change with time and, thus, CCBT still has the potential to increase access to psychological intervention.

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6 APPENDICES

Appendix 1: Summary of CCBT pilot, role of researcher and context of current research

Background to the CCBT pilot project

The researcher was involved in a CCBT pilot in a clinical psychology adult mental health team, which set up a CCBT service for mild to moderate anxiety and depression that ran from November 2009 to November 2010. The researcher joined the CCBT project team in October 2008 to undertake an evaluation for a thesis project after funding had been obtained for 165 *Beating the Blues (Btb)* licenses. The CCBT project team consisted of four clinical psychologists and a clinical associate in applied psychology. An assistant psychologist was employed in October 2009 as the project coordinator for daily administrative tasks.

Researcher's Initial Thesis Plan and role in CCBT Pilot

The researcher's initial thesis project aimed to compare outcomes between two different CCBT packages offered during the pilot, using clinical outcome measures and a patient satisfaction questionnaire. This involved comparing the funded package, *Btb*, alongside the freely available package, *Living Life to the Full (LltF)*, to investigate which was the most effective and preferred package for patients. The comparison was considered important due to the cost implications for the service and the variation in the delivery of the packages. As well as input into planning meetings during the design of the pilot, the researcher was involved in variety of tasks including checking the suitability of some libraries as locations, choosing outcome measures, researching the type of support offered to patients using *LltF*, referral criteria, designing evaluation documents such as the patient satisfaction questionnaire and submitting the ethics application.

Delivery of CCBT pilot project

Referrals began in November 2009 and were planned to continue over a one year period. In an attempt to ensure appropriate referrals, these were restricted to adult mental health

clinicians in the clinical psychology department, adult community psychiatric nurses adult mental health nurses. However, consideration was given to opening referrals up to other sources, such as GPs, after the evaluation was complete. If patients met referral criteria and were willing to engage with CCBT they were offered either *Btb*, which was accessed by appointments during working hours in libraries, or *LltF*, which was accessed at home. This included giving information to patients about the evaluation and seeking consent for the researcher's study.

Low referrals into the CCBT pilot project

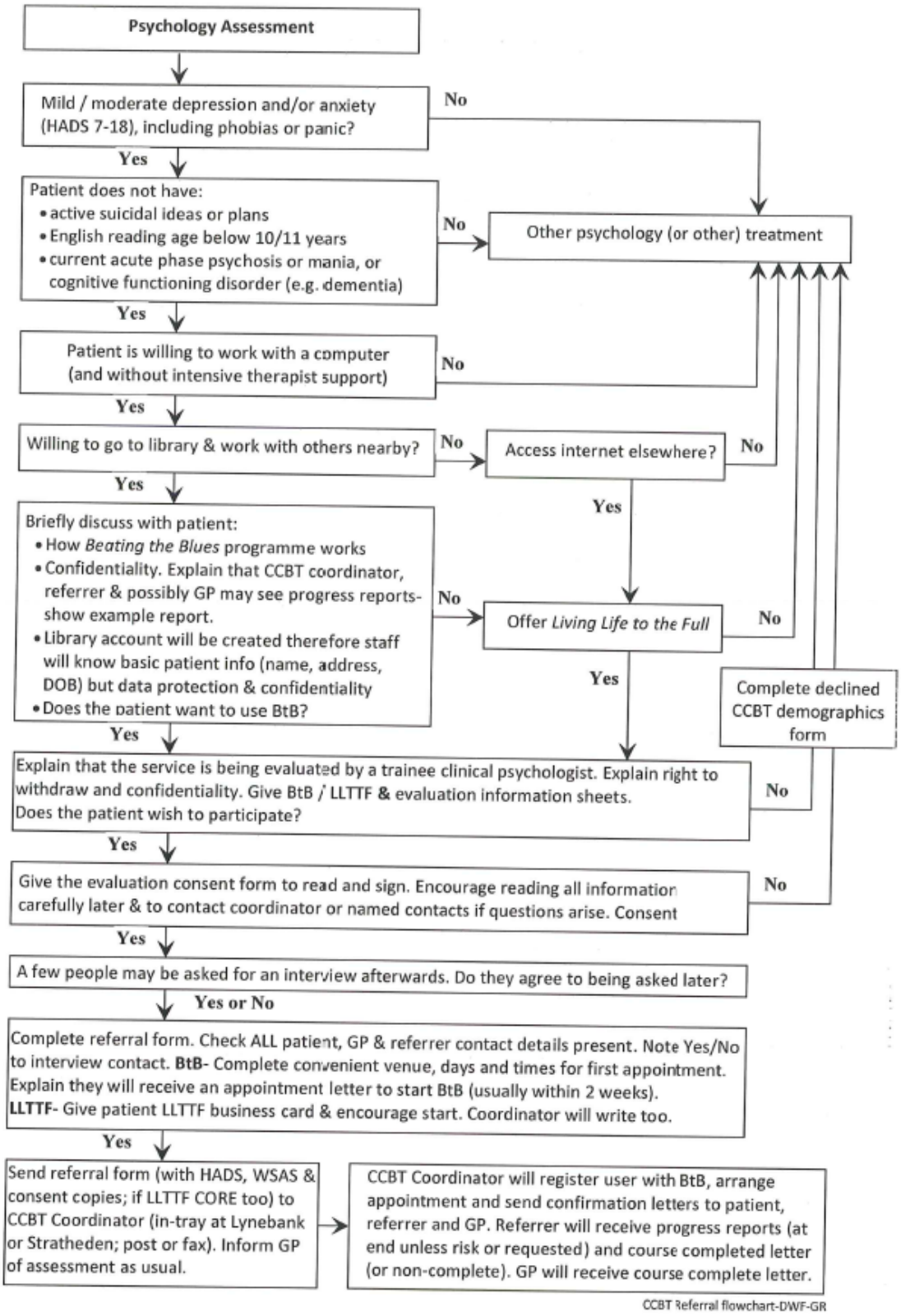
After five months, the referral rate was lower than anticipated, with 10 referrals to *BtB* and 22 to *LltF*. Only one had completed *Btb* and one had completed *LltF*. Reminder emails to clinicians helped increase referrals over the next three months (totalling 46 referrals to *BtB* and 60 to *LltF*) but just six had completed since the project began. In addition, on closer examination, referral data showed that the increase in referrals was made by a small number of clinicians, most of whom were involved in the CCBT project team. Although insufficient uptake had occurred for the researcher to continue the comparison of the two packages as planned, data continued to be collected so that the service could evaluate outcomes at a later stage.

The current research study as a consequence of low referrals

Low referrals into CCBT appeared to be one major aspect contributing to low uptake as well as high dropout (see Appendix 4 for pilot referral data). Low referrals and low uptake have arisen in other studies implementing CCBT (Hetherton *et al*., 2004) but research into reasons for low uptake is lacking and focuses on drop outs and patient acceptance of CCBT (Waller & Gilbody, 2009). After experience of being involved in the CCBT pilot for 18 months and the challenges that had arisen, the researcher decided to investigate reasons for low referrals and implications for implementing CCBT from the perspective of clinicians.

Appendix 2: Map of Fife regions involved in CCBT pilot

Appendix 3: CCBT pilot referral flow chart



Appendix 4: CCBT pilot referral data

Btb = Beating the Blues; LltF = Living Life to the Full

Referrals and progress at two time points during CCBT pilot

Progress	At five months (mid April 2010)		At eight months (mid July 2010)	
Package	*Btb*	*LltF*	*Btb*	*LltF*
Withdrawn	1	1	3	9
To start	4	17	7	35
In progress	4	3	31	15
Completed	1	1	5	1
Total referred	10	22	46	60

Total CCBT referrals over 11 months

Month (2010)	Dec	Jan	Feb	Mar	*Apr	May	Jun	**Jul	Aug	Sept	Oct
Monthly total referrals	7	6	3	14	29	25	23	5	6	3	5
Accumulative Referrals	7	13	16	30	59	84	106	113	119	122	127

* month during which efforts were made to increase referrals for researcher's original thesis comparison of *Btb* and *LltF*.
** month when decision to change thesis idea was finalised, efforts to increase referrals stopped and referrals continued as usual.

Appendix 5: Study ethical approval

Note: this was an amendment to the original CCBT pilot project

NHS Fife | NHS Forth Valley | NHS Tayside

East of Scotland Research Ethics Service

Tayside Committee on Medical Research Ethics A
Research Ethics Office
TAHSC Office, Residency Block, Level 3
Ninewells Hospital & Medical School
DUNDEE
DD1 9SY

Ms Melissa Varley
Trainee Clinical Psychologist
NHS Fife
Clinical Psychology Dept
Lynebank Hospital
Dunfermline
KY11 4UW

Date: 30 September 2010
Your Ref:
Our Ref: **LR/09/S1401/74**
Enquiries to: Mrs Lorraine Reilly
Extension: Ninewells extension 40099
Direct Line: 01382 740099
Email: lorraine.reilly@nhs.net

Study title: **A comparison of two computerised psychotherapy packages piloted in Fife Adult Mental Health services**
REC reference: **09/S1401/74**
Amendment number: **02**
Amendment date: **16 September 2010**

The above amendment was reviewed at the meeting of the Sub-Committee held on 30 September 2010.

Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Document	Version	Date
Questionnaire	1	14 September 2010
Interview Schedules/Topic Guides	1	14 September 2010
Participant Consent Form	1	14 September 2010
Participant Information Sheet: Clinicians Interviews	1	14 September 2010
Participant Information Sheet: Clinicians	1	14 September 2010
Protocol	1.3	14 September 2010
Notice of Substantial Amendment (non-CTIMPs)	02	16 September 2010

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

R&D approval

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

09/S1401/74:	***Please quote this number on all correspondence***

Yours sincerely

L. Reilly

Mrs Lorraine Reilly
Committee Co-ordinator

Enclosures: List of names and professions of members who took part in the review

Copy to: Elspeth Currie, University of Edinburgh
NHS Fife R&D office

Appendix 6: Study management approval

NHS Fife

Ms Melissa Varley
Trainee Clinical Psychologist
Psychology Dept
Lynebank Hospital
DUNFERMLINE

Medical Director, Primary Care
Room 313
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Hayfield Road
KIRKCALDY
Fife KY2 5AH
Tel 01592 643355
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Date 22 October 2010
Our Ref 09-097 09/S1401/74
Enquiries to Aileen Yell
Tel No 01383 565110
Email aileenyell@nhs.net

Dear Ms Varley

A comparison of two computerised psychotherapy packages piloted in Fife Adult Mental Health Services

Amendment No 2 Dated 16 September 2010

Thank your for submitting a copy of the following documents in relation to the above study currently being conducted within NHS Fife :-

Approved documents

Document	Version	Date
Notice of Substantial Amendment Form	02	16 September 2010
Protocol	1.3	14 September 2010
Questionnaire	12	14 September 2010
Participant Consent Form	1	14 September 2010
Participant Information Sheet : Clinicians Interviews	1	14 September 2010
Participant Information Sheet : Clinicians	1	14 September 2010
REC favourable opinion letter for amendment no 2 dated 16.09.10		23 September 2010

I can confirm that this amendment has been noted and approved and this does not affect the Management Approval of the research which was previously issued.

Yours sincerely

DR STELLA CLARK
Medical Director, Primary Care
NHS Fife

Cc : Aileen Yell, Research Governance Officer, NHS Fife, Lynebank Hospital, Dunfermline

Appendix 7: Participant Information Sheet

Existing pilot project: *A comparison of clinical outcome and patient satisfaction after the use of two computerised psychotherapy packages.*

Implementing computerised psychological interventions in a clinical setting: clinicians' views

I would like to ask you to participate in research into computer-guided CBT for patients with mild to moderate anxiety and / or depression. These packages are currently being piloted in some adult mental health services in Fife. I am interested to hear from a range of clinicians who **have** and **have not** referred to CCBT. Please read this information on the purpose of the research and please contact me if you have any questions.

The aim of the research is to help improve Fife's Adult Mental Health service by learning more about how CCBT might be offered to patients. CCBT is a fairly new way of helping people access psychological interventions and some packages have been recommended in NICE guidelines. Evidence suggests benefits for mild or moderate psychological difficulties but more research is needed on implementing CCBT in clinical settings. I wish to examine the referral process by hearing from clinicians. This research will form my thesis for my Doctorate qualification in Clinical Psychology (DClinPsych)

Participation is entirely voluntary and you can withdraw at any time. Participating will involve completing an anonymous questionnaire that should take approximately 5-10 minutes and returning it to me in the envelope provided. Your responses will be stored as confidential data and only I will have access to this data. It will be destroyed after 5 years from when the project is complete, which will be in approximately 12 months. This project has been reviewed by the Tayside NHS Research Ethics Committee, who raised no objections from the point of view of medical ethics.

By returning this anonymous survey you are consenting to participate in this study.

If you have any questions, please contact me on 01383 565402 or mvarley@nhs.net.

Melissa Varley
Trainee Clinical Psychologist

Department of Clinical Psychology
Lynebank Hospital
Halbeath Road
Dunfermline
FIFE KY11 4UW

Thank you for taking time to read this information sheet and for considering taking part in this study.

Appendix 8: Clinician Survey

Implementing Computerised CBT (CCBT): Clinician Survey

1) How much do you use computers generally:

1	2	3	4	5	6	7
Not at all	Rarely	Occasionally	Sometimes, but mostly just for work	Fairly Often	Often	A great deal

2) How much do you like using computers generally:

1	2	3	4	5	6	7
Really dislike	Dislike	Slightly dislike	No opinion	Slightly like	Like	Really like

3) Please rate your knowledge / experience of computerised psychological interventions:

1	2	3	4	5	6	7
None	A little	Some	Reasonable	Fairly good	Good	Excellent

4) In general, please rate how much you approve of offering computer-guided CBT (CCBT) to patients i.e. a computerised guided self-help psychological intervention using a cognitive-behavioural approach?

1	2	3	4	5	6	7
Really disapprove	Disapprove	Slightly disapprove	No opinion	Slightly approve	Approve	Really approve

5) When you FIRST heard about the possibility of offering computer-guided CBT to patients, what did you think?

6) How confident do you feel in deciding whether someone is suitable for CCBT?

1	2	3	4	5	6	7
Not at all	Not much	A little	Fairly	Reasonably	Very	Completely

7) Do you feel you need to learn more about CCBT in order to refer people to it?

Yes/No/I do not wish to refer to CCBT

8) Would you be interested in receiving CCBT training if this was made available? Yes/No

9) **If appropriate for their problems:**

How often do you think you would you refer patients to CCBT?

1	2	3	4	5	6	7
Not at all	Rarely	Occasionally	Sometimes	Fairly Often	Often	Always

How often do you think patients would agree to using CCBT?

1	2	3	4	5	6	7
Not at all	Rarely	Occasionally	Sometimes	Fairly Often	Often	Always

10) What appeals to you, if anything, about offering this type of intervention?

11) What would be your reservations, if any, about referring people to CCBT?

12) Who do you think should refer patients to CCBT? Please indicate any or all that apply.

Primary Care e.g. GPs Specialist Mental Health Services (e.g. Psychologists/Psychiatrists) Open access / self referral

13) Where do you think the best place to offer CCBT should be? Please indicate one or more that apply.

-At home -In a clinic -At appointments in a local library -At work -Patients should be able to choose -No opinion

If you can think of other suitable places please list them here:

14) What would be your preferred intervention for those with mild to moderate anxiety and/or depression, if they agreed to all of them and were motivated to use a self-help approach (please indicate ONE below):

-Books / reading material
-Brief individual intervention with an advice coordinator (3 sessions of guided self-help, including advice and signposting to supports)
-CCBT
-Stress Course (psychologists delivering 6 sessions of advice using a CBT approach in a lecture style format to an audience of approx 30)
-Medication
-Other (please state)

15) If you have known about CCBT (whether through the current pilot project or otherwise) have you offered this to any of your patients?

Y/ N
NA: I have not been aware that CCBT exists
NA: I have heard of CCBT but have not known how to direct patients to these computer packages
NA: I do not feel my client group is appropriate for CCBT
If you do not think your client group are appropriate for CCBT, please briefly explain why this is

If NA on above, skip to qu. 20)

16) If you have chosen **not** to offer CCBT during a session, please briefly give reasons why this would be.

17) If you **have** chosen to offer CCBT during a session, please briefly give reasons why this felt appropriate.

18) If you have offered CCBT to patients and they refused, please briefly describe why you think this was.

19) If any of your patients have agreed to trying CCBT, please briefly describe why you think this was.

20) In which area do you work?

North East Fife | Glenrothes | Kirkcaldy/Levenmouth | Dunfermline/West Fife

Across more than one area described above

21) Please indicate the client group you work with:

Exclusively adult services (ages 16-64) | Non adult services | A mixture

22) What is your profession / job title?

23) How many years have you worked as a clinician?

24) What age are you?

25) What is your preferred psychological treatment method, if any (e.g. CBT)? If you feel you do not know enough about psychological interventions to comment or do not have a preferred approach, just leave blank.

26) If you work in the Clinical Psychology Department, do you carry out rapid assessments? Y / N / NA – not in dept.

27) Have you been involved in the recent computerised CBT pilot project (whether you referred in or not)? Y / N

28) Please rate how much you would agree or disagree with each statement:

1=strongly agree, 2= agree, 3=neither agree nor disagree, 4=disagree and 5=strongly disagree

1)	CCBT may be more open and expressive than F2F	1 2 3 4 5
2)	CCBT may help people with disabilities that make it difficult to attend F2F	1 2 3 4 5
3)	CCBT may help people in rural areas who have difficulty accessing F2F	1 2 3 4 5
4)	CCBT may help people with busy schedules who have difficulty attending F2F appointments	1 2 3 4 5
5)	CCBT may provide services to a broader population of people in need	1 2 3 4 5
6)	CCBT may help people to avoid the stigma of seeing a therapist	1 2 3 4 5
7)	CCBT may provide therapists with greater flexibility in their scheduling	1 2 3 4 5
8)	CCBT may help increase therapists caseloads of people who would not seek F2F	1 2 3 4 5
9)	CCBT allows therapists to better monitor patients in potential danger	1 2 3 4 5

29) Please rate how much you agree with these potential concerns about CCBT

1=strongly agree, 2= agree, 3=neither agree nor disagree, 4=disagree and 5=strongly disagree

10)	The expense involved	1 2 3 4 5
11)	Trying to ensure confidentiality	1 2 3 4 5
12)	The ability to provide emergency services to patients	1 2 3 4 5
13)	Trying to establish a strong working alliance	1 2 3 4 5
14)	Technological glitches and failure	1 2 3 4 5
15)	Lack of legal guidelines	1 2 3 4 5

Thank you very much for taking the time to complete this questionnaire. If you have any further comments, please leave these in the box below.

Appendix 9: Likert-scale items for benefits and concerns of online therapy taken from Mora *et al.* (2008)

Items in italic print used in present study.

Rated on a 5-point Likert scale to describe extent of agreement.
(CCBT = computerised cognitive-behavioural therapy; F2F = face to face therapy)

1) *CCBT may be more open and expressive than F2F*
2) *CCBT may help people with disabilities that make it difficult to attend F2F*
3) *CCBT may help people in rural areas that have difficulty accessing F2F*
4) *CCBT may help people with busy schedules who have difficulty attending F2F appointments*
5) *CCBT may provide services to a broader population of people in need*
6) *CCBT may help people with the stigma of seeing a therapist*
7) *CCBT may provide therapists with greater flexibility in their scheduling*
8) *CCBT may help increase therapists caseloads of people who would not seek F2F*
9) *CCBT allows therapists to better monitor patients in potential danger*
10) I would be willing to use/refer to CCBT if I received appropriate training
11) Are you willing to receive CCBT training if made available?
12) CCBT will grow in popularity
13) CCBT is a fad

Concerns

14) *The expense involved*
15) *Trying to ensure confidentiality*
16) *The ability to provide emergency services to patients*
17) *Trying to establish a strong working alliance*
18) *Technological glitches and failure*
19) Lack of non verbal behaviour
20) Verifying the patients identity
21) Verifying the therapists identity
22) *Lack of legal guidelines*

Appendix 10: Survey covering email

From: Varley Melissa (NHS Fife)
Sent: 22 October 2010 12:27
To: Varley Melissa (NHS Fife)
Subject:

Dear

I appreciate how busy you are, however I hope you might be interested in completing this short online survey about computerised guided self-help for mild to moderate anxiety and depression (using a cognitive-behavioural psychological approach).

This is a relatively new type of intervention and I am investigating its implementation within services from clinicians' perspectives. I would really appreciate your responses. Hopefully this will help inform future service developments and is my thesis for my DClinPsych doctorate.

http://www.surveymonkey.com/s/LR66HBR

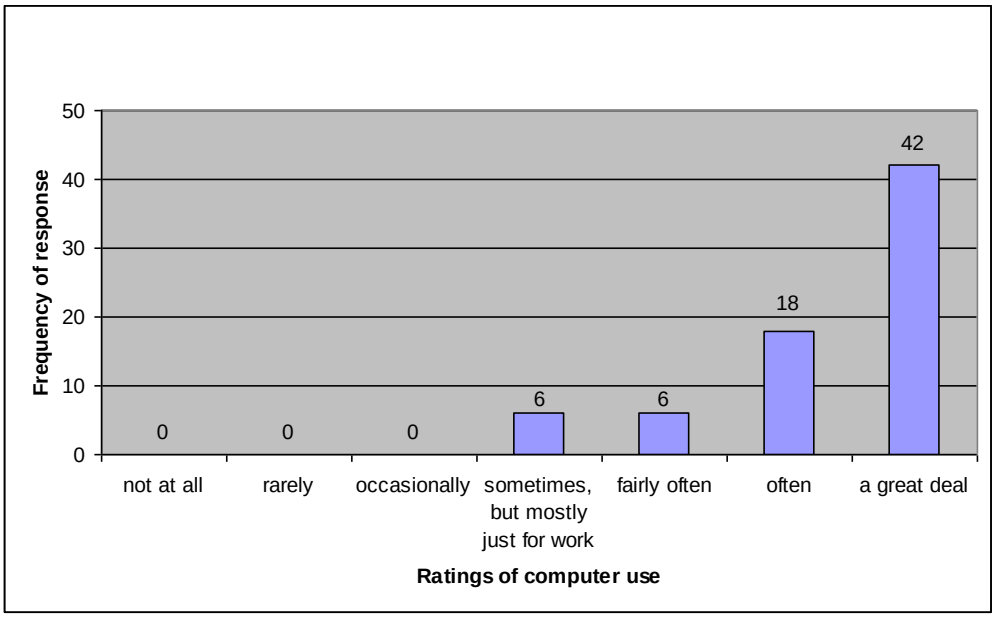
Please find attached an information sheet and the link for the survey, which is anonymous. Feel free to contact me with any questions on mvarley@nhs.net or 01383565402.

Thank you very much for your time.

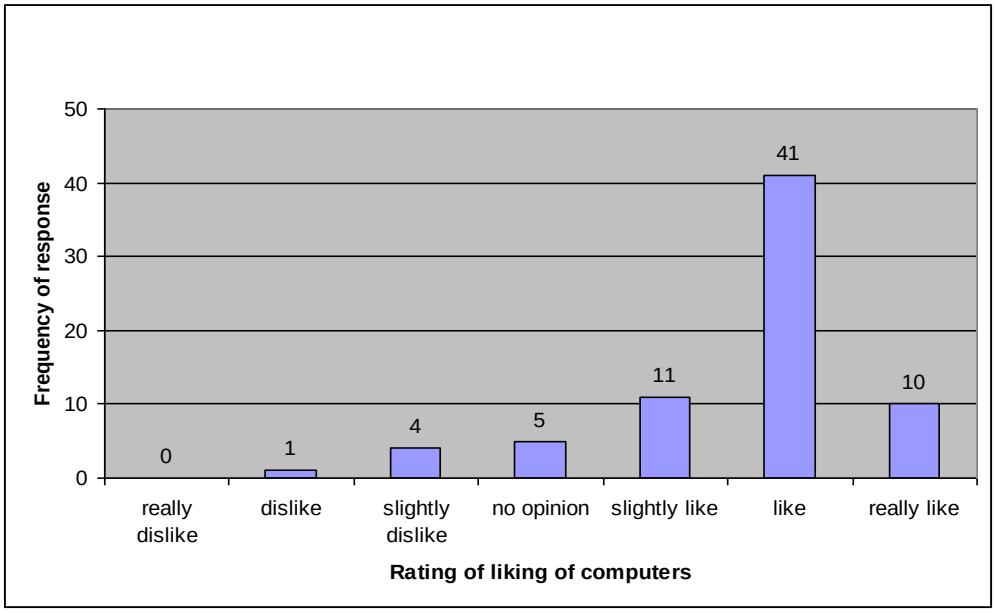
Kind Regards,
Melissa Varley

Specialist Psychological Practitioner (in Adult Mental Health)
Department of Clinical Psychology
Lynebank Hospital
Halbeath Road
Dunfermline
tel. 01383565402

Appendix 11: Sample ratings of use and liking of computers

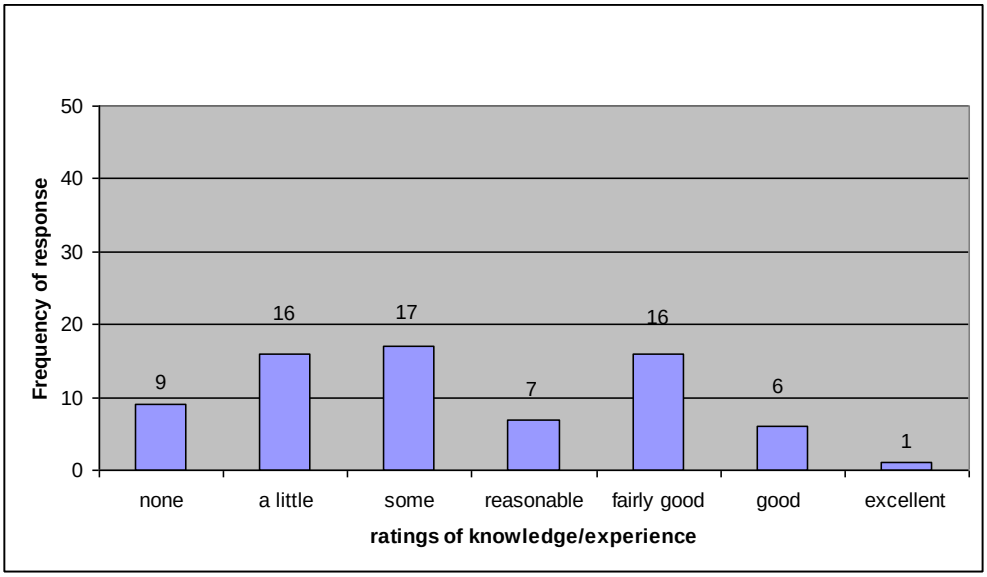


Bar chart showing ratings of computer use on a 7-point Likert-scale (N = 72)

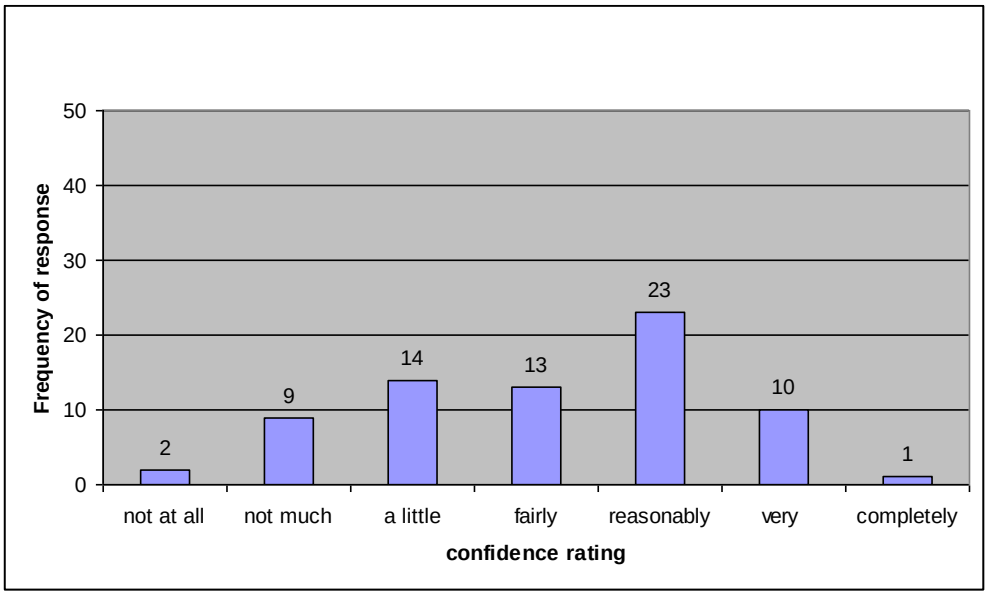


Bar chart showing ratings of liking of computers on a 7-point Likert-scale (N = 72)

Appendix 12: Sample ratings of knowledge/experience of CCBT and confidence in referring to CCBT



Bar chart showing ratings of knowledge/experience of CCBT (N = 72)



Bar chart showing ratings of confidence in referring to CCBT (N = 72)

Appendix 13: Preferred therapeutic orientations

N	Job abrev.	Preferred therapeutic orientations	Group: CBT or Eclectic?
7	GP	Supportive. Behavioural activation and CBT	C
8	CP	draw on a range of psychological models in treatment involving CBt, IPT, Schema focussed, compasion focussed therapy	E
14	CP	Integrative therapy drawing on range of approaches suited to formulation of individual need	E
16	GP	Cbt	C
22	CP	CBT IPT	E
25	GP	CBT	C
26	CP	CBT	C
33	TCP	As i am training i am not sure i have a preferred approach as yet but i would say a combination of CBT, Behavioural and Systemic	E
35	CP	Integrated CBT and psychotherapy used flexibly with peple	E
37	CP	CBT	C
40	GP	CBT...NLP	E
41	HP	combination/mixed as appropriate	E
43	CAAP	CBT Solution Focussed	E
44	AC	CBT	C
46	SPP	schema therapy, mindfulness, ACT, psychodynamic, person centred,	E
48	CP	Cbt	C
50	GP	CBT	C
52	CP	CBT	C
55	CP	CBT/IPT	E
57	GP	CBT	C
62	TCP	CBT mixed with elements of other approaches	E
63	GP	CBT	C
64	GP	CBT	C
66	GP	Cbt	C
68	N	Integrated CAT, CBT,SFBT with person centred counselling.	E
69	N	Solution Focused Therapy Cognitive aligned behaviour therapy Interpersonal Therapy	E
70	N	I am an accredited CBT therapist	C
71	GP	brief advice, sometimes with CBT slant	C
72	C	Person Centred but integrative within this framework as required	E
74	CP	CBT	C
76	TCP	CBT	C
78	TCP	CBT	C
79	CP	Schema-Focused Therapy	E
81	TCAAP	CBT	C
82	CP	CBT	C
83	CP	CBT, Schema and CAT (all 3!)	E
84	TCP	eclectic therapy	E
85	CP	CBT	C

Appendix 14: Example of framework thematic analysis categorisation process

Reservations expressed about CCBT

N	Participant responses to open-ended question	Key Concepts	Themes and subthemes
1	*ease of use of the system*	Whether patients can complete the programme or it is too complex	Able to use CCBT
2	*It seems to be the easy way out. A lot of patients want to deal with another human.*	Insufficient, patients want to speak to someone	Perceived reception by patients: dismissive, prefer human contact
4	*If it is unsupported it would be problematic if emotions/memories surfaced that were difficult for the person to manage.*	How will CCBT be delivered/monitored? Will it be supported? Need for human support otherwise cannot support distress	Delivery: monitoring. Perceived effectiveness: lack of human contact.
5	*it does require people to be fairly computer literate and motivated, if I thought someone had difficulties with literacy and/or using computers I may hesitate in referring them*	Patients need to be literate and competent to use the computer. Need to be motivated to be referred.	Accessibility: able to use computers. Patient motivation
6	*Lack of therapeutic relationship. May seem impersonal- not that interested in them or their problems.*	Absence of therapeutic relationship, patient would receive it negatively, feel disregarded.	Lack of human contact. Dismissive
7	*Access to and ability to use internet is not universal. Problems with motivation due to depression can hamper ability to do self directed course.*	Not everyone has access to and ability to use computers. Need motivation to use it, worse in depressed.	Accessibility: able to access and use computers. Patient motivation
8	*I have had little feedback about the people i have referred to know whom it has benefitted or to fully consider who takes this up and who are suitable referrals*	Uncertainty about suitability of referrals, uncertain about patient responses and uptake into CCBT, who benefits?	Suitable referrals Perceived reception by patients

Appendix 15: Reasons given for why client groups unsuitable for CCBT

N	Reasons given for why CCBT was inappropriate for participants' client group
19	Poor literacy skills, poor problem solving skills, many would need a lot of support for using computers
41	They are generally all under 18 and if presenting with depression/anxiety, usually have other issues that would also need to be addressed.
46	The difficulties the client group I work with face would not be appropriate for CCBT as they are complex and longstanding difficulties
48	Semi
53	At present I am only seeing patients post assessment and they will already have been screened for suitability for CCBT at assessment.
56	people with memory problems struggle to learn new things
62	I sometimes feel it is more difficult to offer this with an older adult population who may not be computer literate, have access to a computer or physically able to get to a library. I would be keen to offer it to those who could though.
75	Also I feel I'd be unlikely to direct my patients to it as they tend to have quite complex presentations.
79	SEMI service, not mild to moderate anxiety.